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Vulture Nest in Southern Iowa

Observations at a Turkey

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INTRODUCTION

Brown (1971) describes the Turkey Vulture (*Cathartes aura*) as an "uncommon breeding bird in Iowa." But because so very little is known regarding the breeding ecology of this bird and the nest sites are not as obvious as those of other birds, perhaps the Turkey Vulture breeds locally in Iowa to the same extent that it does elsewhere within its range.

Turkey Vultures almost always nest on or near the ground (Tyler, 1946). But this species is very adaptable and nests in a variety of places: tops of trees (Hess, 1910 and Townsend, 1914), bare edges of bluffs (Lloyd, 1887), in caves (Lloyd, 1887; Howes, 1926, and Hatch, 1970), and in hollow logs or trees (Carrol, 1900; Jackson, 1903; Pearson, 1919; Kempton, 1927; Scott and Moorman, 1940; and Ramos, et al, 1976). Turkey Vultures have even resorted to laying their eggs in buildings (Jackson, 1903 and Pickens, 1927). They may nest either solitarily (Jackson, 1903 and Kempton, 1927) or communally (Reed, 1965).

This paper is an account of observations made at a single Turkey Vulture nest in southern Iowa.

METHODS

Turkey Vultures are common in southern Iowa where land use is characterized by an interspersed row crops, pasture, hay fields and timber over a hilly terrain. On June 12, 1976, I found a Turkey Vulture nest in Davis County, Iowa. I observed the nest weekly until the two young birds fledged.

RESULTS AND DISCUSSION

Nest Site -- The nest site was on the floor of a dilapidated chicken coop situated in a 0.5 hectare brushy field with timber both 30m to the west and 70m to the north, a two-story abandoned house 10m to the east and a gravel road 10m to the south. The shed was 5m long (east by west), 3m wide and 2m at the highest point, with doors at the east and west ends and chicken wire fencing along a window on the south side. There was a large hole (1m x 2m) in the north facing roof at the west end of the shed. Nevertheless, the nest was protected from the outside elements because it had been positioned in the southwest corner under a 0.5m high chicken nesting box and the roof was intact on the south side of the shed.

The nest was very crude and did not contain any outside material or adult body feathers. It contained two large creamy-white eggs covered with crown markings. The eggs were in a scrape less than 2cm deep in the straw, dirt, and corn cobs that had accumulated on the floor (Fig. 1). This material did not appear to have been arranged in any manner by the adult birds because it was similarly distributed throughout the shed.

A high degree of nest sanitation was maintained at all times. The egg shells were promptly removed from the shed within the first day after hatching. Even though the young are fed regurgitated food which usually has a foul odor, food remains or putrid odor were noticed only immediately after the young regurgitated while performing threat displays as a response to my presence.



Fig. 1. Adult Turkey Vulture with two eggs at one week before hatching (photograph was taken at night).



Fig. 2. Nestlings at 3 days.

Nesting Growth and Behavior -- Both eggs hatched on June 20, 1976. Other hatching dates reported in the literature range from May 24 to June 25 (Howes, 1926; Kempton, 1927; Scott and Moorman, 1940 and Tyler, 1946). The semi-altricial young had black-skinned bodies covered with a contrasting white natal down excluding the bare facial area (Fig. 2). At first, they were weak and did not move from the nest depression until about 1 week of age. At this time, they could move about quite well but stayed within a meter of the nest. One of the nestlings appeared larger and more active than the other, but this difference was not measured nor was it extreme.

Dark primary feather sheaths were first noticed at 2 weeks. At 4 weeks of age, the incoming juvenile plumage was quite prominent with the primary quills measuring about 1cm in length. This plumage development is similar to that described by Jackson (1903), Kempton (1927), Scott and Moorman (1940) and Tyler (1946).

From 3 weeks of age until fledging, the nestlings gave threat displays whenever I approached within a few meters. They would stand up, face me with head lowered, stretch their wings out, open their mouths and emit a loud throaty hissing sound. While holding their heads low, they went through the musculature movements of regurgitation but actually produced regurgitate only when the esophagus was obviously distended with recently ingested food (Fig. 3). The

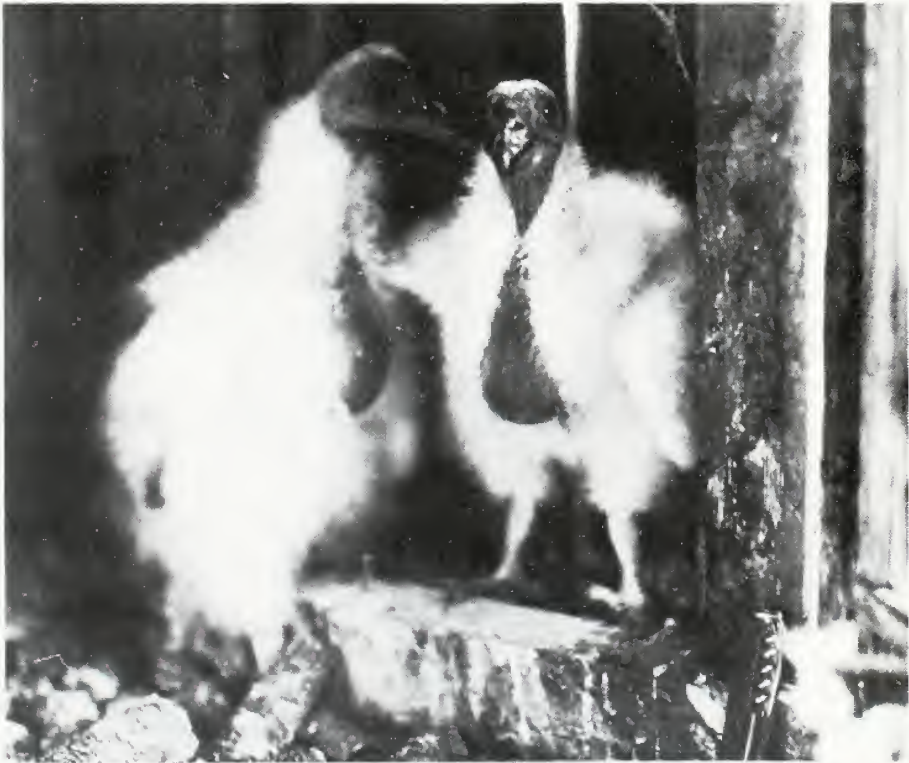


Fig. 3. Nestlings at 4 weeks with obviously distended esophagus.

regurgitate was not projected toward me but rather simply placed out in front of the bird. It was quite odiferous and consisted of muscus and partially digested or decomposed meat. Some regurgitate also contained large numbers of maggots.

This threat posture of the nestlings has also been described by Howes (1926) and is typical for several Falconiformes and Strigiformes with which I am familiar. It seems logical to assume that the Turkey Vulture has adopted this strategy as a defense against terrestrial predators. The fact that adults rarely exhibit this behavior as intensely as the nestlings suggests that once these birds are able to fly, it becomes more adaptive for them to take flight when they sense potential danger. I found the average flight distance for Turkey Vultures feeding together in groups of 2 to 30 birds to be about 100m. The sentinels or non-feeding birds would take flight as soon as they noticed I was approaching and this alerted the other birds that were either busy feeding or unable to detect me due to the topography.

The purpose of regurgitation during these threat displays has been explained by some of the local people as an adaptation for eliminating excess weight in order for these large birds to achieve a rapid lift-off when threatened. However, during the summers of 1976 and 1977, I flushed feeding Turkey Vultures on nearly 200 occasions and never observed any of them regurgitating nor did I find any regurgitate at the feeding sites. Therefore, I would like to propose an alternative theory that the regurgitate may serve the purpose of distracting a predator which could then consume this more easily obtained food source rather than pursue the aggressive young. I base this hypothesis on my observations that this behavior is more commonly exhibited by young birds that are still flightless and therefore, unable to flee successfully from danger. The hissing sound that I heard during the aggressive displays has been reported previously for adults (Jackson, 1903; Kempton, 1927; and Nauman, 1965; and Young (Roddy, 1888).

The nestlings remained near the southwest corner of the shed until about 5 weeks old. At this time, they were about one-half adult size and ranged throughout the shed (Fig. 4). Hereafter, when I approached, they would back into a corner and readily display their typical threat gestures.



Fig. 4. Nestlings at 6 weeks.

On August 1, (at 42 days) one bird ran out the west door when I approached. It continued aggressive behavior and soon regurgitated within 2m of the shed. I did not want to cause the bird any more stress so I left. On the 49th day, both birds were inside the shed and I did not approach close enough to make them try to escape. Their wings were stronger and they held them out for longer periods of time while making threat displays (Fig. 5). This was my last observation of the birds because when I returned on August 22 and 25 (at 63 and 66 days) they were gone.



Fig. 5. Nestlings at 7 weeks.

I am not sure if the young birds actually flew shortly after day 49 or were concealed in the vegetation surrounding the shed. Other reports indicate that Turkey Vultures fledge at anywhere from 8 to 13 weeks and are quite mobile on their feet before this time (Jackson, 1903; Kempton, 1927; and Cott and Moorman, 1940).

Adult Behavior at the Nest Site -- When I approached the nest for the first time, about six Turkey Vultures soared over me several times at tree top level and made throaty hissing sounds, but did not regurgitate. Because this is the only time I observed this group behavior, it is difficult to determine if other members of the colony, in addition to the breeding pair, were defending the nest location or the roost site which was only 500m away.

During the day, whenever I entered the east door of the shed, the incubating bird always escaped through the hole in the roof instead of the closer half-open west door. After the bird departed from the shed, it always perched on the top of a 5m dead tree 15m northwest of the shed. From this vantage point it could observe the nest site through the hole in the roof. The adult made no aggressive displays when it departed or once it landed on the tree, nor did it regurgitate at any time during my observations. Kempton (1927) found that an adult Turkey Vulture did not leave the nest during the last week of incubation when he approached, and could be handled easily.

During incubation, one adult bird was present every time I visited the shed, but after hatching I saw no evidence of day time brooding. This suggests that both parents were searching for food simultaneously. Steward (1974) was able to distinguish between a pair of Black Vultures (*Coragyps atratus*) by natural markings and noticed that both parents fed the young.

During the first three weeks after hatching, day time high temperatures averaged around 28 degrees C (U.S. Department of Commerce, National Weather Service, Ottumwa, Iowa - 20km northeast of nest site) which is about 10 degrees less than a young Turkey Vulture's body temperature (Gardner, 1930). They were sheltered from the direct rays of the sun and therefore did not receive any supplemental heat. Even though Turkey Vultures are capable of lowering their body temperature a few degrees, (Gardner, 1930 and Hatch, 1970) the insulation effect of the natal down undoubtedly plays an essential role in the brood-rearing strategy of this species.

I also made several night observations during the incubation and early brooding stages. At night, the adult bird did not try to leave the shed but rather

remained on the nest, turned away from my flashlight and hung its head low (Fig. 1). Only one adult bird at a time was seen with the eggs or young during night observations. Nighttime brooding ceased when the nestlings were 3 weeks old.

The nighttime low temperatures averaged 12 degrees C for the first three weeks, and 19 degrees C for the three to six week period after hatching (U. S. Department of Commerce, National Weather Service, Ottumwa, Iowa - 20km northeast of nest site). Apparently nighttime brooding was required until the young were larger and became more endothermic. Nighttime brooding continued for a pair of Black Vultures until the young were 43 days old (Stewart, 1974). It also is interesting that the termination of the nighttime brooding occurred at the same time that the threat displays were initiated by the young.

When I noticed that nighttime brooding was no longer taking place, I searched the tree-line bordering the field and could not find any birds roosting nearby. I assume that whenever the adults were not at the nest site during the night, they were roosting communally at the site previously mentioned. Turkey Vultures are basically social birds, and the importance of frequent and continual interactions with conspecifics is suggested by the fact that these birds congregate every day at the roost site four to five hours before sunset (personal observations, Scott and Moorman, 1940; Nauman, 1965 and Black, 1969). Because one adult was always free from both nighttime incubation and brooding and both birds were free from nighttime brooding when the young reached 3 weeks old, the breeding pair was still able to maintain contact with the colony during this period of relative isolation.

SUMMARY

On June 12, 1976, I found a Turkey Vulture nest site in Davis County, Iowa. Both eggs hatched eight days later. The nestlings were covered with white natal down, and did not move from the nest depression until 1 week old. From 3 weeks until they fledged, they exhibited threat displays whenever I approached them.

One adult was present every time I visited the nest site during incubation, but after hatching there was no evidence of daytime brooding. Nighttime brooding ceased when the nestlings had left the children coop by day 63.

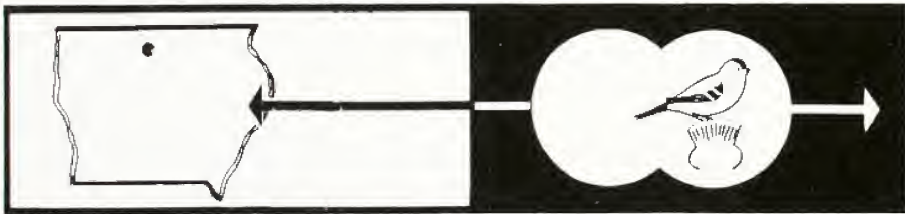
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GENE BURNS
JAMAICA, IOWA

Hancock, Winnebago and Kossuth Counties

On Saturday and Sunday, Aug. 5 and 6, 1978, my wife and I made a 650 mile trip to 25 birding areas in the above mentioned counties. We were able to account for 60 species during our various stops. We found certain areas to be very good for birding and my comments about them will be listed following the names of these areas. It was a good weekend for birding even though the weather was very hot.

I especially recommend the area around Twin Lakes in Hancock County where there were many ducks, Sora, Black Terns, Green Herons, an abundance of Pied-billed Grebes, several Swamp Sparrows, and a very large colony of Yellow-headed Blackbirds.

After an overnight stay in Forest City, we were refreshed for the next day, where we found another very good area in the Lake Mills vicinity in Winnebago County with several colonies of Cliff Swallows and Purple Martins in and near Dahle Park. It was good to see the several martin houses in this park and I wish that more parks would maintain martin houses. Myre Slough also in Winnebago County is a good place for grassland species. There we saw a pair of Red-tailed

Hawks patrolling the area, 4 American Kestrels near by and a good sized Bank Swallow colony also near this area.

Many Great Blue Herons were observed in all three counties throughout our entire trip, possibly 40 or more, and several Am. Kestrels were also seen in various places.

Union Slough National Wildlife Refuge in Kossuth County is a good birding area when it is open to the public. It was closed when we were there. Five public roads cross the refuge and these permit some observation at all times. It is often open during weekend periods in the fall.

We found these three counties very good for birding and felt we were well rewarded during our 2 day trip by visiting these various places and observing the many species seen. I am sure there are several more excellent areas in these three counties to be found by anyone interested in doing so if they want to take the time to find them.

Hancock

(1) **Eldred-Sherwood Recreation Area** -- 100 acres, all facilities, located 3 miles east and 1 mile north of Goodell. This area has several small pine trees, and a nice hardwood timber at the West edge of the lake, a good birding area.

(2) **East Twin Lake Area** -- no facilities, located 5½ miles west of Goodell. A very large colony of Yellow-headed Blackbirds in this area, also Swamp Sparrows nest here, a large number of Pied-billed Grebes and various ducks, several Green Herons and Sora. A Turkey Vulture was overseeing this area. This is an excellent birding area.

(3) **Eagle Lake Park** -- 21 acres, camping, water, toilets, picnicking, located 2 miles east and 2 miles north of Britt. Yellow-headed Blackbirds nest in the lake area which is now mostly cattails. An additional 46 acre forest preserve is located on the west side of the lake.

(4) **Wild Goose Park** -- 62 acres, no facilities, located 2½ miles east and 2 miles north of Miller. Several good sized gravel pits are in the park. Great Blue Herons, Am. Kestrels, Bank and Cliff Swallow colonies found here, a fine birding area.

(5) **Ellsworth Park** -- 144 acres, all facilities including a good sized lake. Situated at the east end of Crystal Lake, we found terns, Herons and hundreds of swallows of various kinds.

Winnebago

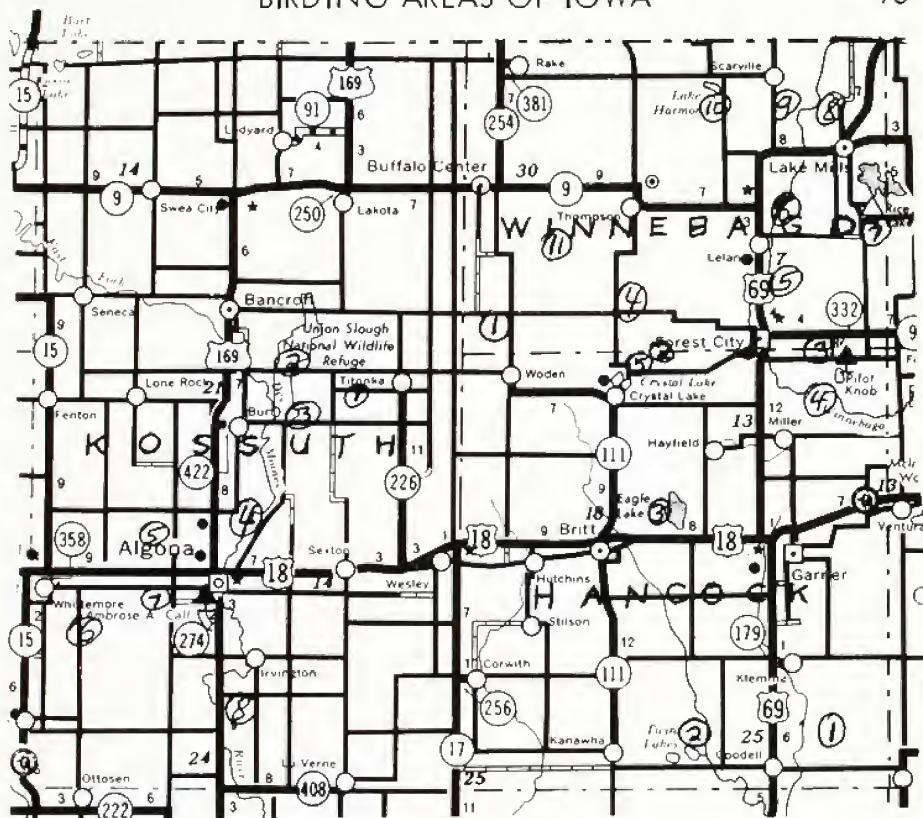
(1) **Grant Township Recreation Area** -- 33 acres, camping and picnicking, located 8½ miles south of Buffalo Center. Area needs to be taken better care of and it could be a very good birding area. It is in a run-down condition now. Bobwhites and Great Blue Herons seen here.

(2) **Thorpe Park** -- 160 acres, all facilities except electricity, located 5 miles west, 1½ miles south of Forest City. Nice lake and marsh, saw American Kestrels and a Bank Swallow colony, an excellent birding area.

(3) **Pilot Knob State Park** -- Includes a large lake, it is a nice birding area. Part of the park lies in Hancock Co. This park includes a floating sphagnum bog and could harbor interesting birds usually found in eastern Iowa.

(4) **Myre Slough** -- no facilities, located 2 miles north and 7 miles west of Forest City. Am. Kestrels, Red-tailed Hawks, Sora and Grasshopper Sparrows found here.

(5) **Ambrosion Park** -- 18 acres, all facilities, plus a lake and a stream. Located 3 miles north of Forest City, we found several Great Blue Herons here.



(6) Winnebago River Recreation Area -- 47 acres, no facilities, located 2 miles northeast of Leland. Area has a Cliff Swallow colony.

(7) Rice Lake -- 612 lake acres, located 2 miles south and 1 mile east of Lake Mills. Good birding area especially for spring waterfowl migration.

(8) Hogsback Area -- 149 acres, camping and picnicking, located 2 miles north 1 mile west of Lake Mills. Includes extensive marsh as well as oak and hickory forest.

(9) Dahle Park -- 9 acres, all facilities, with a stream and a small lake. Located 2 miles north and 2½ miles west of Lake Mills. Several active Purple Martin houses are located in this fine park and a Cliff Swallow colony is near by. Acre for acre, this is the finest small park that I have seen in a very long time, a very good place to bird.

(10) Lake Harmon -- size unknown, no facilities, located 3 miles west 1 mile south, of Scarville. Includes a marsh and is good for grassland species.

(11) Florence Park -- 72 acres, all facilities, located 4 miles west and ½ mile south of Thompson. New area, with marsh, and a small lake. We found many swallows and lots of shore birds.

Kossuth

(1) Michaelsons Slough -- 133 acres, no facilities, located 2½ miles west of Titonka. We observed hawks, rails and herons.

(2) Union Slough National Wildlife Refuge -- 2,155 acres, 5½ miles west of Titonka. This large refuge extends for 8 miles along Union Slough and Buffalo Creek. Shorebird observations can be especially interesting in August. A list of the 219 species of birds observed on the refuge with a seasonal status can be obtained

from the Refuge manager, P.O. Box 248, Titonka, Iowa 50480 by sending a stamped, self-addressed envelope.

(3) **Buffalo Creek** -- 344 acres, no facilities, located 6 miles west, 1 mile south, of Titonka. This is at the south side of Union Slough N.W.R.

(4) **Smith Lake** -- 124 acres, located 3 miles north of Algona. This is a new area, with a lake. Seems to be a nice birding area.

(5) **Stinson Prairie** -- 32 acres, no facilities, located 4½ miles west, 2½ miles south of Algona. Good for grassland species. We found Bobolink, Am. Kestrel and Red-tailed Hawks.

(6) **Siems Park** -- 41 acres, all facilities, includes some nice gravel pits. Located 1 mile south, 1½ miles east of Whittemore.

(7) **Ambrose A. Call State Park** -- 130 acres, a nice wooded area located 2 miles south, 2 miles west of Algona.

(8) **Devine Wildlife Area** -- 41 acres, with no facilities. It is located 8 miles south of Algona.

FIELD REPORTS



Summer 1978

The species marked with * are on the National Audubon Blue List (Am. Birds 31:1087, 1977), the Iowa Blue List (I.B.L. 45:95, 1975) and/or on Dean Roosa's list of endangered, threatened or declining species for Iowa (I.B.L. 46:40, 1976).

General comments. June was warm, with rainfall above average. July was on of the wettest on record. There was consequently much habitat for birds that breed near water, but few mudflats for shorebirds, which were sought mostly in ephemeral puddles of casual water. Relatively few reports were received (coverage was best for the west-southwest), either because the June issue, with its deadline reminder, was late, or because the summer season, anticlimactic after the exciting spring, failed to elicit enough enthusiasm in contributors. **Abbreviations used.** FCF - Fremont Co. Foray, June 2-7, summarized by W. Ross Silcock; IGLR - Iowa Great Lakes Region; RRR - Red Rock Reservoir and Refuge; L. - lake; M. - marsh; S.P. - State park; Sl. - slough.

Loons through Bitterns. A Common Loon was just above the Saylorville Dam, Polk Co. on July 8 (JD). Eared Grebes straggled in w. Iowa: 8 at Forneys L. on June 2 (FCF), 4 on Mud L. on June 21 and one on Lizard L. June 27 (JD), and one still present on June 14 (RP), but no evidence of breeding was obtained (RS). Pied-billed Grebes took advantage of the wet summer: they nested at Swan L., Johnson Co. (June 3, RH) and Willow Sl., Mills Co. (BW), both of which were dry last year; on Forneys L., 18 nests were counted June 2-4 (FCF); there were 15 (mostly immatures) at Sweet M., Bremer Co., June 18 (JS); it was a common nester in n.w. Iowa (JD). Forty-two Am. White Pelicans at Willow Sl., June 4 (BW), and 19 on Trumbull L. Clay Co. June 8 (HD), were late migrants; one-10 were present all summer at Ruthven (TN). A single Double-crested Cormorant summered at W. Swan L., Emmet Co. (TN), and one was at Rush L., Palo Alto Co., June 21 (JD). Aggregations of Great Blue Herons were small or moderate: 14 non-breeders at Riverton, June 3 (FCF), 15 s. of St. Charles (GA), 25 s. of Runnells (DM), in late July, fewer in n.w. Iowa than in 1977 (JD), and 50 by mid-July at RRR (GB). Green Herons arrived late, and small numbers were reported; they were definitely at a

premium in the northeast (JS). A Little Blue Heron was at Forneys L., June 4 (FCF). There were these flocks of Cattle Egrets (but still no evidence of breeding in Iowa): 10 s.e. of Pleasantville, June 13 (GB), and 14 at Forneys L., June 4 (FCF). Great Egrets were even less common, with 4 at Riverton in early June (FCF,IG). The only report of breeding Black-crowned Night Herons was at Hottes L. Dickinson Co., with about 50 nests compared to 140 last year (JD); other sightings included 3 at Forneys L., June 4 (FCF) and 2 at Willow Sl., June 18 (BW), a disappointing total for the state. The usually much rarer Yellow-crowned Night Heron did well: 3 at Forneys L., June 4 (FCF), one at Dewey's Pasture, Clay Co., June 12-14 (TN), and one at Willow Sl., June 23 (BW,RS). Least Bitterns nested at Forneys L. (5 found FCF), in Clay Co. (JD), and Willow Sl. (nest with eggs observed June 16-19, BW); 2 were seen on any June visit to Cardinal M. (JS). *Am. Bitterns seemed much more abundant in the marshes of n.w Iowa than in 1977, with one nest found in Clay Co. (JD).

Waterfowl. Straggling Canada Geese were seen in early June (one in Polk Co., DM; 3 at Riverton, FCF). The number of breeders in the IGLR was believed up (TN); 47 young were counted at Rush L., Osceola Co., in mid-June (DB). A Snow Goose was observed on June 3 n. of Polk City (DM), and 15, left over from the massive spring migration, were still in Fremont Co. on June 4 (RS). The consensus is that Mallards had a good breeding season. Two Gadwalls on June 2 at Forneys L. (FCF) were nonbreeders; the species probably bred in the IGLR (TN), and a female with 7 young was found on June 30 at Willow Sl. (BW). Am. Wigeon were seen on three occasions in June in Clay Co. (JD). The 10 Corn. Pintails on Forneys L., June 2-4 (FCF), did not breed; one was seen June 15-16 at Willow Sl. (BW); breeding was suspected in the IGLR (TN). A total of 8 Am. Green-winged Teal were at Forneys L. and Riverton, June 2-3 (FCF); 2 males at Sweet M., June 14 (JS), and one of each sex at Rush L., June 23 (DB). The 8 N. Shovelers at Forneys L. on June 4 (FCF) were non-breeders, but the species may have bred at the IGLR (TN). Several contributors commented on good breeding success of Wood Ducks. A Redhand nest yielding 6 young was observed at Willow Sl. into mid-July (BW), and they were very common nesters in the marshes of n.w. Iowa (JD). A nest was also found at Forneys L. on June 2 (FCF). Numbers were up at the IGLR, where this species is a regular breeder (TN). A few Ring-necked Ducks were in the IGLR (TN), and up to 3 at Willow Sl. into early July, with no evidence of breeding (RS,BW). Seven broods of *Canvasbacks were found on June 27 at Mud L. (Ron Howing fide TN). A few Lesser Scaup were reported: 2 at Forneys L., June 2 (FCF), up to 4 at Willow Sl., June 4-July 23 (BW), and one at Cardinal M., June 12 (JS). There is no good evidence that the 6 Ruddy Ducks at Forneys L. on June 2 were breeders; one was at Willow Sl. on June 4 and 18 (BW); numbers were up at the IGLR, where the species breeds (TN). On June 4, single female Hooded and Red-breasted Mergansers were seen (documented) at Willow Sl. (BW), and two Red-breasted Mergansers were seen at Lizard L., Pocahontas Co., on June 27 (JD).

Diurnal Raptors through Coots. Five and 10 Turkey Vultures were seen on June 11 and July 2, respectively, in Guthrie Co. and at Ledges S.P. (HZ); as usual, over 30 roosted at RRR (GB). The nest in n. Mills Co. (see Spring Report) yielded 2 young (JG). The best news about Red-tailed Hawks came from the RRR, where Jon Stravers counted 15 nests with 25 fledglings (GB). No report of *Red-shouldered Hawks was received. Two Broad-winged Hawks were present at Ledges S.P. on June 17 and probably nested (JD). The nests of *Swainson's Hawks mentioned in the Spring Report were followed into the summer: no young were seen in Osceola Co. (DB), and one was observed in the Fayette Co. nest (July 15, JS). An adult was also seen in another Fayette Co. location on July 7 (JS), and

one was present at Lake Mills, Winnebago Co., on June 3 (JD). A Rough-legged Hawk found by the Diggsses on June 6, in the course of the FCF, was amazingly late. Two *Ospreys were encountered on the FCF (June 3) at Riverton; one seen by Jean Braley on June 11 in Fremont Co. raised the suspicion that breeding may have occurred (RS). Nests of *Am. Kestrels were reported from e. of Cedar Rapids (FT) and the RRR (GB); 3 individuals observed repeatedly e. of Swan L., Johnson Co. (July 7, 16, RH,NH) may have been a family group: there were 7 near Central City on July 10 (MN); the largest number seen was 5 in Polk Co., with 4 more in the air, on July 29 (HZ). The distribution of Com. Bobwhites is uneven: they were abundant in the Volga L. area, but absent from the rest of Fayette Co. (JS); there were many near Hamburg (IG); one seen on June 11 at Spencer (CS) was the first record in many years for that location. Gray Partridge were considered fairly common in the n.w. (JD). A Wild Turkey with her brood was repeatedly creating a traffic hazard along the Iowa River in Johnson Co. (HO); the population at Volga L. was thriving (JS). An "obtrusive" Virginia Rail at Sweet M., June 14, was probably nesting (JS). Am. Coots profited from the wet summer: they nested on Swan L., Johnson Co. (RH), and 46 nests were counted on Forneys L. (FCF).

Shorebirds through Terns. A Semipalmated Plover was found on June 14 at Sweet M. (JS), and by the Ankeny Ponds on July 30 (HZ). Three Lesser Golden Plovers s. of Riverton (June 3, FCF) were stragglers. Com Snipe on June 18-19 in St. Lucas and at Sweet M. seemed out of place (JS). Some 40 + Upland Sandpipers were seen this summer, between June 9 and July 29, with a total of 13 in the n.e. (JS), a brood at Kalsow Prairie (TN), 3 in the extreme southwest (RP), 2 near Delmar, Clinton Co. (Bob Bryant fide PP), and a pair with 3 young near Walcott (PP): the picture is one of arrested decline. Summer sightings of Willets were unusual: 5 at Willow Sl., July 1 (BW), one s. of Iowa City, July 13 (NH), and one near Des Moines, July 17-20 (DM). Lingered Baird's Sandpipers (15 at Riverton, June 3, 4 at Forneys L., June 4, (FCF), set a record for late departure, as did a Least Sandpiper on June 3 at Riverton, and 4 Dunlins at Forneys L. on June 4. One-3 W. Sandpipers e. of Riverton on June 2 (Jean Braley, RP) were noteworthy. A single Stilt Sandpiper was at Credit Island on July 31 (Jon Dunn fide PP). A Hudsonian Godwit at Forneys L. on June 4 was the latest ever in Iowa (FCF). About 20 Ring-billed Gulls were near Spirit Lake June 9 (JD). Seven Franklin's Gulls at Forneys L., June 4, and 2 on June 6, were evidently late migrants along their favored corridor (FCF); the presence of 2 adults and 2 immatures at Willow Sl. on July 22 (BW) is harder to interpret; the singles by the Coralville Reservoir on June 3 and 5 miles e. of Iowa City on July 2 (RH,CB) were seasonally and geographically out of place. There were also 2 Forster's Terns at Willow Sl. on July 22 (BW), as well as 3 small colonies in the n.w. lakes area (JD), and a *Com. Tern at Prairie Rose S.P., Shelby Co., July 15-16 (TB). A Caspian Tern near Hamburg on June 2 was evidently a late migrant (RP). There were numerous reports of *Black Terns from unusual places: 15 at Cardinal M., June 12 (JS), 50 at Riverton from June 3 to July 30 (RP), in mid-July at Hamburg (IG) and in Shelby Co. (TB), and June 4-July 23 at Willow Sl., with 40+ on July 9 (BW). Only in the IGLR were they considered common nesters (JD).

Cuckoos through Flycatchers. Many reports of *Yellow-billed Cuckoos were received (but the birds were locally scarce, GB); *Black-billed Cuckoos were much less commonly encountered. As was suggested to Robert Arbib, the latter should be put on the Audubon Blue List (the eastern race of the Yellow-billed has been removed from it). Two Chuck-will's-widows were heard calling on June 3 n. of

Waubonsie S.P., a new but plausible location for this species (RS). Removal of the Com. Nighthawk from the Blue List seems justified by reports from Fremont Co., where it is common (FCF), but not by its scarcity in the Pleasantville area (GB). The tone of news about the *Ruby-throated Hummingbird amply justifies its newly-acquired Blue List status, with the most vociferous concerns from western contributors (none found despite an extensive search, JG, and seen, JD). It was fairly common only in the Volga L. area (JS). There were scattered reports of Belted Kingfishers: certainly, the summering population of this species in Iowa has shrunk noticeably. Even Gladys Black, whose letter contained little good news, found numerous *Red-headed Woodpeckers in her area (but fewer than in the past): others continue to call it abundant, and its Blue-listing for Iowa is thus not supported by the information on hand. W. Kingbirds were seen at Spencer, June 3 (CS) and in Fremont Co., June 5 and July 29 (RP), but only a single pair was present near Hamburg, as a token population to be shown visitors (IG). The general silence about E. Phoebes suggests strongly that this bird belongs on the Blue List. Probably the biggest news of the summer was made by Say's Phoebe. This bird has nested with some regularity in w. Iowa, but was quite out of its range when discovered near Waubeek in n.e. Linn Co. on June 17 (FT). It was subsequently joined by a second bird, and seen by numerous observers from the Cedar Rapids-Iowa City area. The search for a nest was unsuccessful. A late migrant Yellow-bellied Flycatcher, June 2, was identified on the FCF. A few Acadian Flycatchers were on territory in Wildcat Den S.P. (June 20, NH), by Forneys L. (June 16, RP), at St. Lucas, and at Volga L., June 29, a new locality (JS). Singing Alder Flycatchers in n.-n.e. Iowa (one n. of New Hampton, June 13, 3 at Volga L., July 6, JS) emphasize the need for accurate delineation of the breeding area of this "new" species. A Least Flycatcher at Volga L. was regular into July (JS).

Swallows through Shrikes. An abundance of all resident swallow species was reported from Hamburg (IG). *Purple Martins were down in Pleasantville, but did well elsewhere, with 219 nestlings banded (DMs). A striking drop in the number of Black-capped Chickadees was an unexpected complaint from w. Iowa (JG). "Only 3 *Tufted Titmice in Fayette Co." was more in keeping with known trends (JS). Starting on July 9, Red-breasted Nuthatches appeared in the Des Moines yard of Boreal Chickadee fame; by the 17th, 3 were present (LW). Brown Creepers were found breeding on June 17 at Sweet M. (JS). The severe damage to the Carolina Wren population was reflected by their absence, for the first time in years, from the extreme southwest (IG), and, for that matter, from practically everywhere else. N. Mockingbirds seem to have deserted a formerly reliable spot in Pleasantville (GB); a fair number was present on the FCF. Am. Robins seldom are mentioned: a decline in their numbers was noted by some (GB,RS), and a paucity of young (WB). Singing Veeries were regular into late June at Sweet M. (JS), 2 at Ledges S.P. on June 17 (JD), and one sang in the Amana Woods on July 4 (MN). The news about *E. Bluebirds is mostly bad: for example, only 4 of 45 boxes productive (9 young) (PP), 5 nests only in 200 boxes, without any success (GB), only 10 nests on the trail (DMs), numbers down in the northeast (JS) and none after migration in the northwest (JD). The only cheerful note comes from Cherokee, where there were 33 successful broods (DB). Blue-gray Gnatcatchers were rather common in Wildcat Den S.P. (June 20, NH); they nested in Ledges S.P. (HZ), and were also found in the Amana Woods (June 3, RH) and in Waubonsie S.P. (2, June 2, FCF). A total of 8 nests of *Loggerhead Shrikes, with 15 young observed, was reported from Fayette (JS), Cherokee (MB,DB), Polk (GA), Marion (GB), and Harrison (RG) Counties, with additional sightings from Pottawattamie, Mills (BW), and Johnson (MN) Counties, but the main strength of

this retreating species is in s.w. Iowa, where the FCF yielded an estimate of 36 breeding pairs (RS). The dark cloud, inexorably present, has a silver lining this summer.

Vireos, Warblers. At least one pair of White-eyed Vireos was in Hickory Hill Park, Iowa City, June 9 - July 16 (MN). It is hard to say anything conclusive about the population of *Bell's Vireo in Iowa from the reports received; a new "soft spot" may be developing in the Council Bluffs area (JG). Comments on the *Warbling Vireo were few, but enough to indicate marked unevenness in distribution, with many in the s.w. corner (IG; 43 on the FCF), and a definite decline in the w. breeding population farther north (JG). Thirteen singing Blue-winged Warblers were counted at Volga L. in June (JS). The abundance of migrant *Yellow Warblers in w. Iowa was followed by a disappointing drop in breeders (JG), but they were considered very common nesters in n.w. Iowa (JD). A Yellow-rumped Warbler on June 17 in Mills Co. (BW), was unexpected. A few Cerulean Warblers were found in Ledges S.P. (June JD, July 2, HZ) and in Wildcat Den S.P. (July 31, Jon Dunn fide PP). Chestnut-sided Warblers were found on June 14 at Sweet M.; they bred at Volga L. (JS) and the Macbride Field Campus, Johnson Co. (TS). As in recent years, small numbers of Louisiana Waterthrushes seemed to be nesting in Ledges S.P. (HZ) and at Waubonsie S.P. (FCF). Two Kentucky Warblers were heard and seen at Wildcat Den S.P., June 20 (NH). No report of *Yellow-breasted Chats received invites a pessimistic interpretation. A singing Canada Warbler on June 3 at Riverton (RS) came as a surprise.

Blackbirds through Sparrows. Bobolinks were thought scarce (GB), but there was an unusually good summer population in Mills and Pottawattamie Counties (JG,BW). The abundance of wet habitat, as noted in the Spring Report, favored the Yellow-headed Blackbird, which re-established colonies forsaken during the drought of 1976-77. The status of the Orchard Oriole across the state seems unchanged, with small numbers of nesting birds reported from places not showing any obvious geographic pattern. Both Meadowlarks were believed reduced in numbers (PP). Waubonsie S.P. continues to be the site where Summer Tanagers can be predictably found (FCF). The only reports of Blue Grosbeaks also came from the s.w. corner. *Dickcissels were less numerous than in the past at RRR (GB) and in the Iowa City area (MN,NH), but abundant in the southwest (MS,IG) and unchanged in the Council Bluffs vicinity (JG). Nesting of Pine Siskins, without specifics, was reported for Cedar Rapids; N. Liberty and Iowa City (WN); one was seen on June 4 at Perry (DMs), and as late as July 9 in Des Moines (LW). It appears that *Grasshopper Sparrows are holding their own as long as their habitat is not disturbed: for example, over a dozen were counted n. of Amana on July 2 (RH,CB), "many" were in Booneville pastures (GA), and they were present in satisfactory numbers in the far west-southwest (RP,JG). The only *Henslow's Sparrows recorded were in early June at Volga L. (JS). The picture of the status of the *Vesper Sparrow is fragmentary. A few Lark Sparrows were seen in n.w. and s.w. counties (HZ,RP). A singing Lincoln's Sparrow on July 8 n. of Amana was quite unusual (CB). The Swamp Sparrow was a common nester in the n.w. (JD).

Contributors. Gene Armstrong, Booneville; Carl Bendorf, Iowa City; Dick Bierman, Cherokee; Woodward Brown, Des Moines; James Dinsmore, Ames; Ione Getscher, Hamburg; Ruth Gochenour, Missouri Valley; Janet Greer, Council Bluffs; Nicholas Halmi, Iowa City; Rick Hollis, Iowa City; Dick Mooney (DM), Des Moines; Dean Mosman (DMs), Elkhart; Weir Nelson, Ely; Mike Newlon, Iowa City; Tom Nigus, Ames; Helen Osmundson, Iowa City; Peter Petersen, Davenport; Ruth Phipps, Shenandoah; Joe Schaufenbuel, St. Lucas; Conrad Schlemmer, Spencer; Thomas Shires, Iowa City; W. Ross Silcock, Malvern;

Marie Spears, Shenandoah; Fred Thompson, Marion; Lurene Wartens, Des Moines; Barb Wilson, Hastings; Hank Zaletel, Ames. N. S. HALMI, R.R. 6, IOWA CITY 52240

Reminder: Please try to have Fall reports reach me by December 5. N.H.

General Notes

Yellow Rails And More at Cone Marsh -- On April 30, 1978 I arrived at the northeast corner of Cone Marsh at 7 a.m. to find Mike Newlon, Rich DeCoster and Tom Staudt searching for a Worm-eating Warbler which had been seen the day before by the Iowa City Bird Club. I was fortunate to get a brief, albeit clear, glimpse of it. We moved south, then east across the dike, and south again along the marsh, flushing many Soras along the way. We decided to search the large grassy field to the east for LeConte's Sparrows. Several Swamp Sparrows were flushed as well as several lighter sparrows which went up and down into the grass without letting us get a good look at them. Finally I saw the face pattern of LeConte's Sparrow on two of them reasonably well. But the others were not satisfied, so we spread out again to cover the next, smaller field to the east. This field was mostly dry, but contained several hidden marshy patches. About half way across the field, a rail slightly smaller than a Sora flushed 10 yards ahead of me and flew 40 yards before disappearing from sight. The entire trailing edge of the wing, about one fourth of the wing's width, was white. Mike Newlon and I talked about the Yellow Rail having white on the wing, but the field guide shows it as a patch on the secondaries. Alas, we did not bring our books to check it out. As we moved on, a rail flushed close to my feet and went down again into one of the marshy patches about 15 yards ahead. I thought it also had white on the wing. We pounced on the area where it went down, but could find nothing. A Sora flushed - no white on the wing.

Back across the dike, we spread out to cover an alfalfa field in hopes of seeing more LeConte's Sparrows. I was covering the edge, when I heard the others shout excitedly. A rail with a white trailing edge on the wing had flushed. We stalked it for three more flushes, getting a good look at the dark, almost black wing with white trailing edge on both primaries and secondaries. A glimpse from the side revealed a buffy-colored body and smaller body size than a Sora. We last saw the bird fly into a multiflora rose hedge at the edge of the field.

On the way home I stopped and photographed an Upland Sandpiper at the eastern edge of Johnson County. At home, I initiated our chain of alerts by calling Nick Halmi - not home; and then Tom Shires - he had already heard the news and was on his way to Cone Marsh with Nick and Carol Newlon. Believe it or not - they found the Yellow Rail at about 2 p.m. where we had left it in the multiflora rose hedge at 10:30 a.m. They flushed it several times and were able to see the smaller, buffy body and head as well as the trailing white edge of the wing. Nick told me that when he first saw the Yellow Rail from a swamp buggy at Anahuac Refuge in Texas, Victor Emanuel had warned him not to expect a discrete white wing patch, but a white posterior edge extending on to the inner primaries from the secondaries.

The next Saturday, six days later, Halmi, Kent and Shires were back at the marshy field across the dike at 6 a.m. and flushed a Yellow Rail from the same spot as the week before. The white on the trailing edge seemed more confined to the secondaries and broader.

Why go to Texas to see the Yellow Rail, when 30 years of birding in Iowa will bring one to the fore? -- T. H. KENT, 211 Richards Street, Iowa City.

Varied Thrush at Cedar Falls -- I am writing to report that a male Varied Thrush has been observed in Cedar Falls. The bird was first sighted by Esther Lang of 2503 Franklin St., Cedar Falls, "sometime before Christmas" and has been observed by her and her husband (Professor Wm. C. Lang), Mr. and Mrs. Alfred Jannette of 2508 Franklin St. and Mrs. Grace Leinen of 2516 Franklin St. on a more or less regular (almost daily) basis since that time and is still around. Mrs. Jannette reported observing the bird again early this morning.

I have known about this bird for about a month and was finally able to observe it personally at 8:15 a.m., March 2, 1978. I first observed it in a tree between the Jannette and Leinen residences while watching from inside the Jannette residence at a distance of about twenty feet. Later it flew to the ground beneath this tree where it fed with House Sparrows on mixed bird seed that had been dislodged from a bird feeder by the feeding activity of other birds and by squirrels. These residences are located adjacent to the University Avenue Preserve which provides good cover and open water the year around from a stream which flows through the Preserve.

While I had never observed this species before, I feel positive of its identity. The Jannetts have the book, *Bird of North America*, by Robbins, Brunn and Zim and the bird appeared identical to the male pictured in this book. The dark band across the breast, light stripe over the eye and wing bars were all clearly evident.

It may also be of interest to note that another bird of this species is known to be spending the winter along the shores of Lake Wissota near Chippewa Falls, Wisconsin. My wife has an aunt (Mrs. Claudia Maves, R.R., Chippewa Falls) who lives there and has been observing a Varied Thrush at her feeders on a regular basis also. It has been verified by authorities of the area, and I believe they were able to obtain pictures of it. -- VIRGIL E. DOWELL, Dept. of Biology, UNI, Cedar Falls.

A Substitute for Niger Seed -- If Niger seed becomes unobtainable, sunflower hearts (at half the price last year) are an excellent substitute. Last winter we fed these in a "Droll Yankee" feeder together with whole sunflower seeds and peanuts, with Niger seed in a smaller feeder. We noticed the Common Redpolls and Pine Siskins frequently ignored the Niger seed, preferring the other feeder. By the time we stopped feeding last spring all of the sunflower hearts, whole sunflower seeds and peanuts had been eaten, while considerable Niger seed remained in the other feeder. It has been suggested the sunflower hearts may be chopped in a kitchen blender and fed in a Niger seed feeder, but a simpler solution might be the enlarging of the holes in the feeder. WOODARD H. BROWN, 432 Tonawanda Dr., Des Moines, 50312.

Pine Siskin Nest in Des Moines -- On the morning of April 8, 1978 Woody Brown, Dick Mooney and I went to 5205 Shriver, Des Moines to check the report of a Pine Siskin nest. The neat little nest was about nine feet above the ground in a small spruce tree. It was plainly visible from the driveway and only about twelve feet from the garage door where there was a thistle feeder. A Siskin was sitting on the nest and did not leave for several minutes after our arrival. Other Siskins were buzzing about in the shrubbery and eating thistle seed. There was never any evidence of young being fed so it must be presumed that the Siskins were not successful. According to Brown's *Annotated List of the Birds of Iowa* no recent nestings have been reported in the state. MARGARET BROOKE, 126 51st Street, Des Moines 50312.

Obituaries

Lillian C. Stoner

Word was received of the death of Mrs. Lillian C. Stoner at her home in St. Petersburg, Fla. on Saturday, March 25, 1978.

Mrs. Stoner was born in Norway, June 12, 1885, to C. P. and Rebecca Quam Christianson. The deceased graduated from the Norway high school in 1901. She belonged to the Norway Methodist church, where she held every office and headed the music department, playing the foot pump organ. She attended the University of Iowa where she majored in ornithology. Later she married Daton Stoner, faculty member in the Zoology department. Most of their life was spent in Albany, New York where their work took them and where she wrote several books on birds. She is the donor of the Lillian C. Stoner Science scholarship awarded to a deserving senior of the Norway high school each year. Mrs. Stoner joined the I.O.U. in 1945 and was a life member.

Burial was at the North Liberty cemetery March 31. She is survived by a nephew, Hayford D. Enwall of Gainesville, Fla. She was preceded in death by her parents, her husband, three brothers and a sister. (From the Benton County Star-Press.)

Book Review

The Bird Table Book in Colour -- Tony Soper -- David and Charles, North Pomfret, Vt. -- 128 p., 36 color and one black-and-white photographs, 9 color plates and many line drawings -- 1977 -- \$7.95.

Last year we reviewed the American version of this book, **The Hungry Bird Book** (I.B.L. Vol. 47 p. 69). This revised British edition is well illustrated with color drawings and photographs but deals with British species entirely. So although the color illustrations are a fine addition the above mentioned U.S. version is the best bet for Iowans. ed.

Bird Flight -- Georg Ruppell -- Van Nostrand Reinhold Co., New York -- 191 p., 16 color and 192 black-and-white photographs, many line drawings and diagrams -- 1977 -- \$18.95.

As photographic equipment improves our knowledge of events in nature such as bird flight can be investigated more completely. The aerodynamics of bird flight and the structures which make it possible are described. Specialized techniques such as gliding, soaring and backward flight are explained. The high-speed photographic techniques used to study the rapid wing movements is also described. The book summarizes what is currently known about flight in a concise manner and completely updates previous efforts in this area. ed.

Crows, Jays, Ravens and Their Allies -- Silvia B. Wilmore -- Paul S. Ericksson, Publisher, Middlebury, Vt. 05753 -- 208 p., many maps, line drawings and black-and-white photographs -- 1977 -- \$12.95.

Recently we reviewed a technical monograph by Goodwin on the crows of the world (I.B.L. 46 p. 125-6). This book provides a somewhat more general approach to this family of bold, noisy, aggressive and often inquisitive birds. The author covers their appearance and structure, feeding, courtship, mating and breeding habits, distribution, habitats, migration, behavior patterns and individual ways. Chapters cover the Jays, Magpies, Nutcrackers, Choughs, Crows, Ravens, Jackdaws, Rooks, and the African monotypic genera. If you are interested in this family but don't feel geared for Goodwin's monograph you should consider this very readable and informative treatment. ed.

Ravens, Crows, Magpies and Jays -- Tony Angell -- University of Washington Press, Seattle -- 112 p., 84 drawings -- 1978 -- \$14.95.

As in his earlier book on owls (I.B.L. Vol. 45 p. 26), the author-artist captures the essence of his subjects nicely. The book is primarily a collection of drawings with supplementary text. Some of the special adaptations of this family, such as tool use, language, communication, food caches and predator mobbing are covered. ed.

Wild Birdwatchers I Have Known -- Gerry Bennett -- Published by the author, R. R. 2, Woodbridge, Ontario, Canada -- 102 p. -- 1977 -- paperbound, \$4.00.

On unproductive field trips the birders are usually more interesting than the birding. Gerry Bennett records some of their birding incidents and the result is a generally humorous book. After you have read it you will want to share it with your fellow birders. ed.

Birds of the World -- A Checklist -- James F. Clemnts -- Two Continents Publishing Group, Ltd., New York -- 532 p. -- 1978 -- \$15.00.

First published in 1974 (I.B.L. Vol. 44, p. 77), this convenient repository for one's life list has been updated. It now lists 9,058 species, up over 150 from the first edition. This total can be reduced to 8919 by eliminating extinct, nearly extinct and doubtful species. The cost is only five cents greater and the book is eight pages longer. It is now the most up-to-date listing of the world's birds and includes common and Latin name and general range. The discontinued genera are cross-referenced, a useful feature. ed.

Breeding Biology of the Gray Gull -- Thomas R. Howell, Braulio Araya and Wm. R. Miller -- U. of California Press, Berkeley -- 78 p., 21 black-and-white photographs -- 1974 -- paperbound, \$2.50.

The breeding habits of this common South American west coast gull have remained a mystery to ornithologists for many years. A nesting colony was found by A. W. Johnson in 1919 but was not described in print until 1945. The birds are present at the nests chiefly at night and nest in a desert habitat. This is a scientific paper but it fills a void in the general knowledge of a common species. ed.

Lories and Lorikeets -- Rosemary Low -- Van Nostrand Reinhold Co., New York -- 180 p., 21 color photographs -- 1978 -- \$18.95.

Although aimed at aviculturists this book contains some good photographs and may be of interest to ornithologists. The text includes description, distribution and avicultural data for all races of these "Brush-tongued Parrots". The book is well written and produced and covers some very colorful species. ed.

MEMBERSHIP LIST

Corrected through September 1, 1978

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|---|---|
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McGregor 52157, 1929 | Autenrieth, Horace (L), Route 1,
Paullina 51046, 1975 |
| Alpers, Kenneth P., 115 Washington
St., Sumner 50674, 1977 | Ayres, Mr. and Mrs. Charles C. Jr.,
922 N. Green St., Ottumwa 52501,
1941, 1955 |
| Alton, Mrs. Florence, P. O. Box 405,
Oelwein 50662, 1959 | Baker, Maurice F. and Beth (F),
Route 1, Clarion 50525, 1976 |
| Armstrong, Mr. and Mrs. Eugene (F),
Booneville 50038 1972 | Bakerink, Earl, Fontanelle 50846, 1977 |
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1977 | Baldner, Mrs. Ann, Route 1, Dallas
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| Atherton, Mrs. Stanley, Route 2,
Springville 52336, 1956 | Ballantyne, Mrs. Dean, 1903 D
Shamrock Ave., Lee's Summit, Mo.
64063, 1959 |
| Augustine, Mrs. Frank, 3435 Wakonda
Ct., Des Moines 50321, 1967 | Barnett, Leslie W. (J), Box 140, Route
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St., Clinton 52732, 1972 | Barratt, Robert, Elliott Apts., 219 - 4th
St., Des Moines 50309, 1977 |

- Barrows, Harry S. (S), 1044 - 24th St.,
West Des Moines 50265, 1972
- Bartlett, Donald L. (S), 1909 1st Ave.,
S., Denison 51442, 1977
- Bartlett, Wesley H., 423 S. Jones St.,
Algona 50511, 1935
- Baumgarten, J. L., 2709 Bidwell
Road, Muscatine 52761, 1975
- Beals, Sandra L., 331 E. Spruce,
Cherokee 51012, 1977
- Beaton, Don, 3303 Ashwood Drive,
Des Moines 50322, 1978
- Bednarz, Jim, Dept. of Animal
Ecology, 124 Sciences II, I.S.U.,
Ames 50011, 1977
- Beeson, Mrs. John, 2605 Clark St.,
Sioux City 51104, 1977
- Bell, Harlan L., Box 541, Vinton 52349,
1962
- Bell, Mrs. Robert (S), Route 2,
Russell 50238, 1976
- Bendorf, Carl J., 825 - 7th Ave., Iowa
City 52240, 1976
- Berger, Mr. and Mrs. Jeff (F), 308
Second Ave. N., Badger 50516, 1977
- Berry, Robert V., Route 4, Iowa City
52240, 1978
- Betsworth, Anthony S. (J), 1622 W.
Lunah, Sioux City 51103, 1978
- Bickelhaupt, F. K., 340 S. 14th St.,
Clinton 52732, 1977
- Bierman, Dick and Judy (F), 901
Harris, Cherokee 51012, 1975
- Binsfeld, Mrs. A. J., 1712 - 48th St.,
Des Moines 50310, 1939
- Birkey, Thelda, Route 1, Wellman
52356, 1977
- Black, Mrs. Gladys B. (H), 608 DeWitt
St., Pleasantville 50225, 1957
- Blackett, A. L. (Al), 603 West 15th St.,
N., Newton 50208, 1978
- Blanchard, Sam, 109 Happy Hollow
Blvd., Council Bluffs 51501, 1978
- Blevins, Lewis D., 2003 E. 12th St.,
Davenport 52803, 1959
- Block, Mrs. Catherine A., Route 1,
Fayette 52142, 1978
- Blome, Dr. and Mrs. Glenn (F), 224
East Pennsylvania Ave., Ottumwa
52501, 1973
- Blommer, Robert J., 218 Oakwood
Ave., Ottumwa 52501, 1977
- Blumer, Dwight N., Route 1, Moulton
52572, 1977
- Boller, William A., 1524 Milton Ave.,
Des Moines 50316, 1965
- Boswell, Rick, 14 West 37th St. Place,
Sioux City 51104, 1977
- Bottleman, Mrs. John, Route 2,
Northwood 50459, 1954
- Botts, Mrs. Helen, 109 N. 18th St.,
Marshalltown 50158, 1978
- Bowers, Elaine, 1214 - 22nd St., Des
Moines 50311, 1978
- Bowles, John B., Dept. Biology,
Central College, Pella 50219, 1963
- Boyd, Mrs. Ivan L., 1020 7th St., Box
182, Baldwin, Kansas 66006, 1937
- Braley, Mrs. F. M., 209 W. Thomas,
Shenandoah 51601, 1956
- Branhagen, Alan, 810 Mound St.,
Decorah 52101, 1976
- Brenton, Junius C. (S), S.W. 14th and
Windover Rd., Des Moines 50315,
1977
- Brewer, Marion, Route 2, Cherokee
51012, 1975
- Briggs, Shirley A., 7605 Honeywell
Lane, Bethesda, Md. 20014, 1964
- Brooke, Mr. and Mrs. Dwight, 126 51st
St., Des Moines 50312, 1957
- Brown, Mrs. Betty, 1315 N. 19th St.,
Fort Dodge 50501, 1977
- Brown, Dr. Joseph D., 330 Windsor
Dr., Iowa City 52240, 1971
- Brown, Mrs. Joseph K. (S), 10414
Applegate Dr., San Antonio, Texas
78230, 1966
- Brown, Willard J., 3714 Kingman
Blvd., Des Moines 50311, 1969
- Brown, Mr. and Mrs. Woodward H. (S
& R), 432 Tonawanda Drive, Des
Moines 50312, 1947, 1958
- Bruhl, Mrs. Cleo, 3821 - 66th No. 48,
Des Moines 50322, 1977
- Brunner, Dorothy A., Nora Springs
50458, 1946
- Bryant, Eldon J., Route 1, Box 104,
Akron 51001, 1962
- Buckles, Mrs. Ruth E., 5612 Ur-
bandale Avenue, Des Moines 50310,
1973
- Buford, David C. (J), Route 2, Box
114, Donnellson 52625, 1977

- Burk, Dr. Myrle M. (C), 1511 E. Gresham Road, Waterloo 50701, 1949
Burns, Mr. and Mrs. Gene (F), P.O. Box 32, Jamaica 50128, 1975
Caldwell, Linda A., 2742 E. High St., Davenport 52803, 1977
Camarata, Antoinette, 1420 Patton Ave., Waterloo 50702, 1971
Carlson, Douglas C., 1017 Duff, Ames 50010, 1976
Carlson, Mrs. Marie, Route 2, Boone 50036, 1976
Carpenter, Mrs. Madeline, 3646 John Hix Road S., Wayne, Mich. 48184, 1957
Carter, Dennis L., Route 4, Box 292H, Luray, Va. 22835, 1947
Carver, Elsie L. (A), Route 1, Box 34, Toledo 52342, 1977
Ceradsky, Ernestine, Route 1, Charles City 50616, 1977
Christensen, Dr. and Mrs. Everett (F), P.O. Box 1096, Thomasville, Ga. 31792, 1951
Clausen, Delmar, 53 Stony Way, Mason City 50401, 1976
Collins, E. R., Route 2, Box 222, Waukegan 50263, 1977
Conway, Edward J., Dougherty, 50433, 1976
Cook, Barnett C., 517 Hayward Avenue, Ames 50010, 1973
Cook, Mr. and Mrs. Marlin (F), 2715 W. 35th St., Davenport 52806, 1978
Copp, C. Esther, Box 36, Wheatland 52777, 1933
Coopersmith, Doris, 7603 Sherman Drive, Omaha, Neb. 68134, 1978
Corbin, Mr. and Mrs. Dennis (F), Route 1, Donahue 52746, 1976
Cornwell, Suzanne, 3914 Hillcrest Drive, Des Moines 50310, 1978
Cortelyou, R. G., 5109 Underwood Avenue, Omaha, Neb. 68132, 1960
Corwin, Mrs. Eleanor, 104 E. 9th, Cedar Falls 50613, 1943
Corzette, Virgil, 1914 Gladstone, Ottumwa 52501, 1973
Coulter, Mrs. Enid, 620 Haynes Avenue, Centerville 52544, 1977
Crane, Frederick G., 338 - 29th St., Des Moines 50312, 1973
Crawford, Dr. John A., Dept. Fisheries & Wildlife, Oregon St., Univ., Corvallis, Ore. 97331, 1971
Crim, Mr. and Mrs. Lloyd (F), Route 2, Lucas 50151, 1976
Crocker, Mr. and Mrs. Edwin G. (L & L), 720 E. First St., Storm Lake 50588, 1967, 1960
Crossley, Mr. and Mrs. George E., 1890 Wood St., Dubuque 52001, 1948
Cummins, Mr. and Mrs. Raymond (F), 204 N.W. 12, Pocahontas 50574, 1978
Current, Charles and Anne (F), Route 1, Ottumwa 52501, 1977
Dalbey, Mr. and Mrs. Dwight J. (F), 1054 Belle Mar Dr., West Des Moines 50265, 1977
Dashner, Mrs. Joan (S), Route 1, Pacific Junction 51561, 1970
Davidson, Mrs. Nancy E. and family (F), 3911 Hull, Des Moines 50317, 1975
Decker, Mrs. Orpha, 405 Polk St., Warsaw, Ill. 62379, 1977
De Coster, Richard J. II, 3166 N. Hudson, Apt. 2, Chicago, Ill. 60657, 1975
Delle, Margrieta, 703 Streb St., Iowa City 52240, 1966
DeLong, Bruce L., 1444 Byron Ave., Waterloo 50702, 1977
DeLong, Mrs. W. C., 314 N. Silver, Lamoni 50140, 1939
DeLoss, Robert E., 3105 Jennings, Sioux City 51104, 1963
Dettmann, Kevin, General Delivery, Bloomer, Wis. 54727, 1975
DeVaul, Mrs. Florence, 308 N. Main, Inwood 51240, 1978
Diehl, Mrs. W. W., Route 3, Indianola 50125, 1977
Diggs, Mr. and Mrs. Fitzhugh L., Route 1, Box 64, Hamburg 51640, 1963, 1961
Dinsmore, James, Dept. of Animal Ecology, Iowa St. Univ., Ames 50011, 1975
Dodd, Mrs. George H., Route 3, Clear Lake 50428, 1966
Dorow, Mr. and Mrs. Herb (S & R),

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- 1200 S. 8th Ave. E., Newton 50208, 1971
- Duecker, Steve, Box 275, Danbury 51019, 1976
- DuMont, Philip A. (H), 4114 Fessenden St., N.W., Washington, D.C. 20016, 1932
- Duritsa, Mary, 823 Reserve Drive, Cedar Falls 50613, 1978
- Dwyer, Timothy L., 814 Woodlawn Ave., Muscatine 52761, 1976
- Earhart, LaVola J., 205 W. Madison, Jefferson 50129, 1977
- Easterla, Dr. David A., Dept. of Biology, N.W. Mo. St. Univ., Maryville, Mo., 64468, 1977
- Eaton, Edward E., P.O. Box 317, Sidney 51652, 1959
- Efta, Mrs. Clem, Route 1, Auburn 51433, 1977
- Ehlers, Mrs. John, 305 Chestnut St., Reinbeck 50669, 1947
- Ehlers, Mrs. Roland, Route 1, Maquoketa 52060, 1968
- Elick, Charles, Box 576, Mitchellville 50169, 1977
- Eller, Mrs. Dennis, Route 1, Hubbard 50122, 1976
- Engelmann, Mr. and Mrs. R. E. (F), 8011 N.W. 54th Ave., Des Moines 50324, 1977
- Eness, Vergil D., 415 - 18th St. West, Clear Lake 50428, 1977
- Englehorn, Alfred J. (S), 2923 Arbor St., Ames 50010, 1954
- Eno, Mr. and Mrs. Jack C. (F), Route 2, Timbervally, Blue Grass 52726, 1975
- Erickson, Floy, 1298 - 29th N.E., Cedar Rapids 52402, 1971
- Fagen, Doris J., Box 387, Carlisle 50047, 1978
- Farmer, Larry K., Route 1, Westfield 51062, 1974
- Fast, Lucille S., 1320 N. Carroll, Carroll 51401, 1975
- Fawks, Elton, 510 Island Ave., East Moline, Ill. 61244, 1950
- Fedeler, Helen J., 1426 - 3rd St., S.E., Mason City 50401, 1978
- Felsing, Mr. and Mrs. Paul (F), Route 3, Box 158, Knoxville 50138, 1973
- Ferguson, Madeline, 1032 Newton Road, Apt. No. 2, Iowa City 52240, 1978
- Ferris, Mickey, 1620 Fourth N.E., Hampton 50441, 1977
- Fisher, Mrs. Richard, Route 2, Keosauqua 52565, 1964
- Flaherty, John J., 5002 North Pine St., Davenport 52806, 1968
- Flynn, Dr. and Mrs. Gordon (F), 2246 W. 3rd St., Davenport 52802, 1976
- Flynn, Mrs. Norval C., 1640 Cornwall Ave., Waterloo 50702, 1966
- Foley, Robert L., 1301 Harold Drive S.E., Cedar Rapids 52403, 1973
- Ford, Arthur M., Box 173, Moville 51039, 1959
- Ford, Mrs. Betty, 3948 - 55th St., Des Moines 50310, 1977
- Formanek, Kenneth J., 820 Knob Hill Drive, Des Moines 50317, 1964
- Fullerton, Eleanore, S-18 1623 Park Towne Court, Cedar Rapids 52402, 1958
- Fulton, Bernard C., 517 E. Vine, Ottumwa 52501, 1973
- Frings, Hubert, 514 College Ave., Norman, Okla. 73069, 1970
- Fromm, Mrs. Thelma, Route 4, Mason City 50401, 1975
- Fuller, Dr. James, 625 Brookland Park Drive, Iowa City 52240, 1973
- Fuller, Mrs. Lowell, 148 Windsor Circle, Burlington 52601, 1962
- Galvin, Mrs. Ardiss, Route 1, Alta 51002, 1974
- Garlock, Mr. and Mrs. Elwood (F), 1700 C Ave. N.W., Cedar Rapids 52405, 1977
- Getscher, Mrs. Edwin A., No. 4 Skyline Dr., Hamburg 51640, 1959
- Gillaspey, J. Donald, Route 1, Box 66, Lamoni 50140, 1956
- Glasgow, Mrs. Clifford, 619 Forest Blvd., Marshalltown 50158, 1970
- Glasson, Mrs. Marlyn, 597 Pammel Court, Ames 50010, 1974
- Goellner, Dr. and Mrs. Karl E. (F), 1764 Sherbrook Dr. N.E., Cedar Rapids 52402, 1956, 1972
- Goeppinger, Wanda L., Route 4, Box 154½, Boone 50036, 1977

- Goodman, Dr. John D., Biology Dept., Anderson College, Anderson, Ind. 46011, 1946
- Goodwin, Elizabeth A., 818 Polk Blvd., Des Moines 50312, 1978
- Gorden, Mrs. Irma L., Route 2, Box 159, Glidden 51443, 1976
- Govro, Mrs. Dorothy, Box 534, Rockford 50468, 1977
- Govro, Keith C., 159 B Shadowview, Oak Spur Hills Apt., Manchester, Mo. 63011, 1978
- Graham, Garry, 505 E. Clinton, Indianola 50125, 1971
- Graesing, Howard F., Route 3, Spirit Lake 51360, 1975
- Green, Mrs. Ruth C., 506 W. 31st Ave., Bellevue, Neb. 68005, 1977
- Greenough, Dean, 106 Sunset Court, Waverly 50677, 1978
- Greer, Msgr. Edward C. (S), 415 E. Pleasant Valley, Sigourney 52591, 1971
- Greer, Mrs. Janel, 341 Steven Circle, Council Bluffs 51501, 1976
- Grimes, L. Orville (S), 313 N. 15th St., Marshalltown, 50158, 1964
- Gritton, James H. (S), 2555 Wedgewood Road, Apt. 1, Des Moines 50317, 1972
- Grunwell, Mrs. W. R., 700 Laurel Park Road, Dubuque 52001, 1952
- Gustafson, Mrs. Ethel E., 1310 East Washington, Des Moines 50316, 1978
- Guthrie, Richard A. (C), Box 122, Granger 50109, 1939
- Haack, Mrs. Ewald M., Box 126, Klemme 50449, 1977
- Hahn, Allan C., 932 Hancock St., Muscatine 52761, 1977
- Haldy, Lanny R., Box 6, Amana 52203, 1977
- Hall, Oscar L., Route 1, Box 80-A, Nevada 50201, 1978
- Hall, Mr. and Mrs. Willis (F), 1111 Douglas Ave., Yankton, S. D. 57078, 1978
- Hallberg, Mrs. M. K. (L), No. 4 Rock Bluff Road, Ottumwa 52501, 1959
- Haller, Mr. and Mrs. Harold (F), 225 E. Highland Ave., Ottumwa 52501, 1973
- Halmi, Nicholas S., Route 6, Box 182, Iowa City 52240, 1972
- Hamilton, Mrs. Oliver F., 1800 River Street, Burlington 52601, 1971
- Hampson, James E., 806 N. Pleasant Street, Princeton, Ill. 61356, 1969
- Hanft, Richard (S), Box 116, Nichols 52766, 1965
- Hanna, Mr. and Mrs. Darrell M., 25115 Kirby Hill, Hewet, Ca. 92343 1958, 1955
- Hansen, Dick, 4493 Bunker Hill Dr., Bettendorf 52722, 1978
- Hansen, Mrs. Leory C., 314 McKinley Ave., Lowden 52255, 1965
- Hanson, Mrs. Alfred, Route 2, Ackley 50601, 1977
- Hargrove, Dr. and Mrs. James Lee, P. O. Box 411, Solon 52333, 1978
- Haring, Barbara L., 2902 Eastwood Dr., Iowa City 52240, 1978
- Harr, Douglas C., Box 65, Larchwood 51241, 1977
- Harrington, Irene, 1834 First Ave. N.E., Cedar Rapids 52402, 1959
- Haskell, Mrs. Gladys E., 231 E. Creston Ave., Des Moines 50315, 1952
- Hanhinsson, Mary F. (L), 10 Roberts Ave., Davenport 52803, 1973
- Hays, Mary A., 4767 N.W. 50th St., Des Moines 50323, 1977
- Hays, Russell M., 533 Home Park Blvd., Waterloo 50701, 1939
- Hayward, Mrs. Viola (L), P.O. Box 866, Fairfield 52556, 1954
- Hedges, Arthur C., 1115 Sheridan Ave., Iowa City 52240, 1977
- Heidenreich, Mrs. Patricia, 1103 S. Cedar Knolls, Cedar City, Utah 84720, 1978
- Heine, Russell, Route 4, Spencer 51301, 1977
- Henrickson, Dennis R., Jr., Route 4, Estherville 51334, 1977
- Hermansen, Mrs. George, Route 1, Box 58, Corning 50841, 1967
- Hettinger, Mrs. J. H. (S), Sun Valley Lake, Ellston 50074, 1977
- Heuer, Ralph J. (S), 2528 Wilkes Ave., Davenport 52804, 1940
- Heusinkveld, Miss Frances, 55

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- Peterson Drive, Storm Lake 50588, 1975
- Heusinkveld, Irwin R., 304 S. Mickley St., Paullina 51046, 1972
- Heusinkveld, Mr. and Mrs. Willis M., 840 South Park, Centerville 52544, 1973, 1977
- Hill, Mrs. Grayce Easton, 419 Haynes Ave., Centerville 52544, 1976
- Hinkley, Mrs. Mabelle, 131 Vincent Road, Waterloo 50701, 1960
- Hodges, Herbert J. (L), 1810 E. River Drive, Davenport 52803, 1944
- Holland, Thomas E., 2555 N.E. 53rd Court, Des Moines 50317, 1978
- Hollis, Janet L., 1216 Kirkwood Ave., Iowa City 52240, 1978
- Holmes, Rex (S), 602 High Street, Red Oak 51566, 1977
- Holz, Barbara, Route 2, Grand Junction 50107, 1977
- Hood, Irene, 205 S. Lincoln, Mt. Ayr 50854, 1977
- Horak, Janice J., Route 1, Swisher 52338, 1973
- Horner, Martha E., 618½ West Fourth St., Waterloo 50702, 1978
- Horton, Harry R., Route 1, Argyle 52619, 1977
- Hoskins, Mr. and Mrs. Nelson R. (F), 508 Shaul Ave., Ottumwa 52501, 1976
- Hoskinson, Mrs. Helen Hall, 622 North Tenth St., Clarinda 51632, 1932
- Hovde, O. M., 603 North St., Decorah 52101, 1964
- Howery, Carol, 1183 East Ridgeway, Waterloo 50702, 1978
- Hradek, Mary, Ollie, 52576, 1978
- Huber, Ronald L., 2896 Simpson St. N., Roseville, Minn. 55113, 1964
- Huff, Marlys, 310 S. 18th Ave., Marshalltown 50158, 1976
- Huit, M. L., 626 Brookland Park Dr., Iowa City 52240, 1963
- Irey, Mrs. Wayne, 507 E. 7th, West Liberty 52776, 1975
- Jackson, Jerome A. (L), Dept. of Zoology, P.O. Drawer Z, Miss. St. U., Mississippi State College, Miss. 39762, 1967
- Jardine, Wallace E., Route 2, Box 9, Pocahontas 50574, 1978
- Jefferson, Mr. and Mrs. Robert L. (F), Route 2, Ames 50010, 1972
- Jennings, Mrs. Donald E., Box 96, Shenandoah 51601, 1977
- Jessen, Robert H., 1919 N.E. 6th Ave., Austin, Minn. 55912, 1973
- Johnson, Ann L., Route 1, Norwalk 50211, 1961
- Johnson, Clifford O., 891 Kaufmann, Dubuque 52001, 1941
- Johnson, Donald G. and Elaine W. (S & S), 81 Woodshire Dr., Ottumwa 52501, 1967
- Johnson, Mr. and Mrs. G. Adolph, 919 Circle Drive, Carlisle 50047, 1973, 1958
- Johnson, Lynn, P.O. Box 54, McGregor, 1968
- Johnson, Thomas N., 2450 N. Jefferson, Ottumwa 52501, 1976
- Johnston, Linda, Route 4, Ottumwa 52501, 1977
- Jones, Mrs. Bette, 2813 Francis Drive, Des Moines 50310, 1975
- Kail, Henry, Route 1, Farnhamville 50538, 1977
- Kaldenberg, Mrs. Orville, Route 2, Monroe 50170, 1973
- Kamerick, Mrs. M. G., Route 4, Ottumwa 52501, 1977
- Kane, Miss Florence, 302 - 4th Ave., S.W., Independence 50644, 1957
- Kaufman, Mrs. Charles L., P.O. Box 67, Grinnell 50112, 1962
- Keck, Dr. Warren N. (L), Box 444, Keosauqua 52565, 1936
- Keeler, Milford D., 2510 S. Federal, Mason City 50401, 1957
- Keenan, James, Route 3, Ogden, 50212, 1948
- Keettel, Dr. William C. (S), 343 Hutchinson Ave., Iowa City 52240, 1959
- Kennedy, Joseph G., 13717 Chef Menteur Hwy., Apt. 203, New Orleans, La. 70129, 1958
- Kent, Fred and Dr. Thomas H., 302 Richards St., Iowa City 52240, 1950
- Kerns, Sonia K., Lohrville 51453, 1977
- Kielsmeier, Mrs. Martin, Route 2, Hubbard 50122, 1975

- Kiesel, Margaret M., 1204 East St., Grinnell 50112, 1977
- King, Mrs. Ross C. (L), 3699 Mississippi View, Clinton 52734, 1961
- Kinnaird, Mrs. Edith (H), 1611 Fremont, Marshalltown 50158, 1932
- Kirchgatter, Mr. and Mrs. H. A. (F), 801 Kingsley Ave., Waterloo 50701, 1973
- Kirkendall, Mrs. Stella M., South View Acres, Inc., Apt. 4, Melbourne 50162, 1974
- Klass, Erwin E., 05 Science II, Iowa State U., Ames 50011, 1975
- Kleen, Vernon M., 2311 Huntington Rd., Springfield, Ill. 52703, 1971
- Kline, Mr. and Mrs. Edwin A. (F), 2025 Friley Road, Ames 50010, 1964
- Klopfenstein, Hazel, Route 2, Winfield 52659, 1965
- Klotzbach, John R., 401 3rd Ave. S.W., Independence 50644, 1973
- Knight, Calvin A., 425 Lee St., Iowa City 52240, 1975
- Knoop, Pearl, Box 215, Marble Rock 50653, 1938
- Koenig, Darwin, Route 4, Decorah 52101, 1964
- Konradi, Lowell A., Box 24, Odebolt 51458, 1977
- Koppen, Mrs. Parker and family (F), Box 35, Swaledale 50477, 1976
- Kovacs, William P., 148 S. Hickory, Pleasant Hill 50317, 1977
- Krieger, Curtis E., 122 S. 10th St., Marshalltown 50158, 1977
- Kuhlman, Mrs. Charles, 1727 N. Grant Road, Carroll 51401, 1976
- Kurtz, Carl, Route 1, St. Anthony 50239, 1975
- Lair, Mrs. Owen, 715 W. 4th St. S., Newton 50208, 1958
- Lande, Joseph O., Box 129, Okoboji 51355, 1975
- Landenberger, James F. 2031 Northgate Dr. N.E., Cedar Rapids 52402, 1971
- Landes, Mrs. Mina I., 732 - 12th Ave. N., Fort Dodge 50501, 1977
- Lanning, Mrs. Virginia B., 816 W. Second St., Madrid 50156, 1971
- Larson, Leonard A., 225 Maine St., Farnhamville 50538, 1977
- Laub, Mrs. Russell, R.F.D., Rippey 50235, 1977
- Layton, Mr. and Mrs. Beryl (F), 1560 Linmar Dr., N.E., Cedar Rapids 52402, 1970, 1958
- Layton, Mr. and Mrs. Keith D. (F), Box 124, Oskaloosa 52577, 1958, 1962
- Leopold, Frederic (S), 111 Clay St., Burlington 52601, 1962
- Leshner, Fred, 509 Winona St., LaCrosse, Wis. 54601, 1956
- Lilja, Mrs. Marilyn H., 6401 Van Wert Road, Cedar Falls 50613, 1977
- Liljedahl, Mrs. Lucile, 1080 30th St., Marion 52302, 1947
- Lindner, Bruce W., 305 1st Ave. N.W., Clarion 50525, 1977
- Livermore, Wayne, 4537 Country Club Blvd., Sioux City 51104, 1978
- Lohff, Mrs. Clarence E., 528 S. Kiel, Holstein 51025, 1975
- Lovig, Mrs. Conrad, Route 1, McGregor 52157, 1977
- Lowder, Kenneth L., 1211 Wylde Green Road, Iowa City 52240, 1978
- Lowell, Mrs. Margaret, Route 1, Box 346, Fairfield 52556, 1953
- Lowther, Peter, Museum of Natural History, Univ. of Kansas, Lawrence, Kan. 66045, 1963
- Lundt, Mrs. Millard J., Route 2, Toledo 52342, 1978
- Maas, Tomma Lou, Route 2, Story City 50248, 1976
- MacCracken, Mrs. Lela, 8118 Terrace Drive, El Cerrito, Cal. 94530, 1977
- Maish, James P., Box 351, 312 - 5th St. S.W., State Center 50247, 1964
- Malmberg, Mrs. Kathryn, Route 2, Centerville 52544, 1973
- Mannetter, Mrs. Donald, Route 1, Box 138, Hubbard 50122, 1975
- Martin, Ruth T., 706 13th Ave. N.W., Clinton 52732, 1978
- Mast, Beth B. (S), 4150 E. 60th St., No. 702, Davenport 52807, 1976
- Matthias, Mrs. Rosetta, 920 S. 6th Ave. W., Newton 50208, 1978
- Mayberry, Mrs. Earl L., Box 263, Wyoming 52362, 1946

- Melcher, Rev. M. C., 540 - 12th St., Box 353, Marion 52302, 1939
- Meyer, Mr. and Mrs. Edwin E. (F), 704 E. 32nd St., Davenport 52803, 1959
- Miller, Hilda E., 1211 - 19th Ave., Rock Valley 51247, 1972
- Miller, Mr. and Mrs. Lowell A., 714 Oregon, Waterloo 50702, 1975, 1977
- Millikin, Mrs. Forrest G., 1126 Ingleside Dr., S.W., Cedar Rapids 52404, 1944
- Moles, Clifford C., Route 1, Box 192, Shenandoah 51601, 1977
- Monteith, Mr. and Mrs. Phillip B., 1327 E. 25th St., Des Moines 50317, 1978
- Mooney, Mr. and Mrs. Richard D. (F), 3814 Carpenter Ave., Des Moines 50311, 1966, 1971
- Moore, Kathleen R., Route 2, Story City 50248, 1977
- Moriarity, Joe (J), 25 Rayman Drive, Ottumwa 52501, 1978
- Morris, Mrs. Gertrude V. (S), 1409 Greenwood Drive, Ottumwa 52501, 1977
- Morrow, Mrs. Max, 335 North 3rd St., Seymour 52590, 1978
- Mosman, Darwin (Dean), Route 1, Box 112 A, Elkhart 50073, 1973
- Mudge, E. W., Jr. (L), 5926 Averill Way, Dallas, Texas 75225, 1966
- Mueller, Mrs. Esther, Route 2, Waverly 50677, 1978
- Muilenburg, Ronald W. (C), 33 Hillcrest Ct., Webster City 50595, 1959
- Murley, Margaret R., 816 Simpson St., Evanston, Ill. 60201, 1963
- Murphy, Ray Jr., 3714 John Lynde Rd., Des Moines 50312, 1977
- Musgrove, J. W., 2414 Adams Ave., Des Moines 50310, 1938
- Mustain, Mrs. Dale, "River's End", Route 2, Mason City 50401, 1975
- Myers, Robert, 1236 Sylvia Ave., Waterloo 50701, 1978
- McBride, Beth E., 510 5th S.E., Mason City 50401, 1978
- McCormick, Warren, 303 E. Edgington Ave., Box 46, Eldora 50627, 1977
- McMahon, F. J., Route 4, Independence 50644, 1970
- McWilliam, Mr. and Mrs. Wiltse (F), Scotch Acres, Paton 50217, 1972, 1965
- Nagel, Margaret M., 503 Cutler St., Waterloo 50703, 1958
- Neal, Mrs. Warren D., Route 1, Box 71, Dexter 50070, 1978
- Nearing, Mr. and Mrs. C. Turner (F), 1400 W. Macon St., Decatur, Ill. 62522, 1961, 1975
- Nelson, D. Weir, Jr. and family (F), Route 1, Ely, 52227, 1975
- Nelson, Mrs. C. S., Rice Lake, Route 2, Lake Mills 50450, 1978
- Newlon, Mr. and Mrs. Michael C. (F), 408 Wales St., Iowa City 52240, 1974
- Newman, John P., Beaverdale Heights, West Burlington 52655, 1976
- Nicholas, Randy, 1027 W. 14th, Cedar Falls 50613, 1977
- Nicholson, Mrs. Marcia (S), 3662 Ingersoll Ave., Apt. 314, Des Moines 50312, 1964
- Nickelson, Mr. and Mrs. Robert L., 2314 Helmer St., Sioux City 51103, 1948, 1959
- Nigus, Thomas A., Dept. Animal Ecology, 124 Sciences II, Iowa State Un., Ames 50011, 1977
- Norris, Kim L., 3513 Ross Rd., Ames 50010, 1977
- Ollivier, Mr. and Mrs. Roy (F), 902 Pine Circle, Starkville, Miss. 39759, 1943, 1973
- Olsen, Mrs. A. Edmund, 1521 West Main St., Marshalltown 50158, 1975
- Oppendahl, Roberta A., 906 Suburban St., N.E., Cedar Rapids 52402, 1972
- Orrick, Mrs. H. C., Jr., 2203 Terrace Drive, Cedar Falls 50613, 1977
- Osher, Mrs. J. B., 1103 North 7th St., Estherville 51334, 1959
- Osmundson, Helen, Route 6, Box 189, Iowa City 52240, 1977
- Osness, Mr. and Mrs. John M., 320 Columbia Circle, Waterloo 50701, 1960, 1972

- Parker, Mrs. Dorothy, Route 1, Anita 50020, 1975
- Parsons, Mrs. Robert O, 208 Lake St., Box 24, Sioux Rapids 50585, 1942
- Patterson, Scott (J), 409 E. 22nd St., Atlantic 50022, 1977
- Payne, Luff E., 337 Woodland Dr., Council Bluffs 51501, 1971
- Pearson, C. E. (S), 632 N. Stone Ave., LaGrange Park, Ill. 60525, 1955
- Peasley, Mrs. Helene, 2001 Nash Drive, Des Moines 50314, 1934
- Peck, Mary E., 3839 Cornell St., Des Moines 50313, 1957
- Peer, Mable O., 937 Payton Ave., Des Moines 50315, 1977
- Petersen, Mr. and Mrs. Peter C. (C & R), 235 McClellan Blvd., Davenport 52803, 1952, 1962
- Pettijohn, Mrs. Clyde, 309 Prospect St., Shell Rock, 50670, 1960
- Pettingill, Dr. Olin S., Jr. (L), Wayne, Maine 04284, 1937
- Phipps, Ruth (S), 310 University, Shenandoah 51601, 1966
- Phipps, Mrs. Russell L., Route 5, Boone 50036, 1978
- Pierce, Mr. and Mrs. Fred J (HC & H), Winthrop 50682, 1923, 1957
- Plambeck, Esther D., Beaman 50609, 1977
- Prince, Herbert M., Route 2, Box 374, Keokuk 52632, 1963
- Proescholdt, Beth, Liscomb 50148, 1978
- Ptacek, Mrs. J. L., 1518 Willson Ave., Webster City 50595, 1978
- Putnam, Mrs. Max and family (F), 3522 - 38th St., Des Moines 50310, 1965
- Ralston, Mrs. Leslie, Conrad 50621, 1975
- Ray, Barbara, 2730 Moyer St., Des Moines 50310, 1976
- Rector, Harry E., 507 W. 13th St., Vinton 52349, 1942
- Richerson, Hal B., M.D., 331 Lucon Drive, Iowa City 52240, 1977
- Rickert, Jon E., 122 N. Main, Elizabethtown, Kentucky 42701, 1974
- Rider, Ruth, 101 East Hempstead, Fairfield 52556, 1977
- Riedel, Mr. and Mrs. Paul (F), Route 2, Ottumwa 52501, 1977
- Rinehart, Mr. and Mrs. Homer, Box 43, Marshalltown 50158, 1959, 1974
- Rinkel, Charles T., Jr., 5 Woodshire Dr., Ottumwa 52501
- Roberts, Mrs. Stella, Box 97, Coon Rapids 50058, 1977
- Robinson, Mr. and Mrs. Joseph G., 3710 W. 12th St., Cedar Falls 50613, 1978
- Rolenc, Mr. and Mrs. Edward (F), 604 E. Henry, Mt. Pleasant, 52641, 1975
- Roosa, Dean M., Box 57, Goldfield 50542, 1957
- Rose, Mary F. (L), 10 Roberts Ave., Davenport 52803, 1973
- Rosene, Walter, Jr., 127 Oak Circle, Gadsden, Alabama 35901, 1941
- Ross, Hollis T., 81 Fairmount Dr., Lewisburg, Pa. 17837, 1940
- Rouw, Mark, 1202 E. Sheridan, Des Moines 50316, 1968
- Rowser, Mrs. June E., 512 - 5th Ave., Clarence 52216, 1978
- Ruegnitz, Mrs. R. S. (S), 2117 Orchard Drive, Dubuque, 52001, 1942
- Ruprecht, Jeanette, Lowden 52255, 1974
- Ryan, Mark R., Dept. Animal Ecology, 124 Science II, I.S.U., Ames 50011, 1977
- Sadler, Ernie, Box 193, Route 1, LeClaire 52753, 1971
- Sailer, Helen, 519 - 4th St., Ackley 50601, 1978
- Sand, Sibyl D., Route 2, Lake Mills 50450, 1977
- Sanders, Joan, 2740 - 24th Ave., Marion 52302, 1978
- Sauer, Dr. Pauline L., Museum Director, U.N.I., Cedar Falls 50613, 1965
- Savage, Mr. and Mrs. Edward (F), 613 N. 16th St., Marshalltown 50158, 1969
- Schaufenbuel, Joe (C), St. Lucas 52166, 1976
- Schirck, Shirley, 228 W. 21st St., Carroll 51401, 1978

- Schlemmer, Conrad F., 310 E. First St., Spencer 51301, 1973
- Schooley, Mrs. Joan, 209 N. Fellows Ave., Ottumwa 52501, 1972
- Schramm, Frank H., Box 587, Cliff Road, Burlington 52601, 1934
- Schwanke, Mrs. Charles (S), 2510 Cottage Row, Cedar Falls 50613, 1948
- Schwanke, Miss Maxine (S), 2510 Cottage Row, Cedar Falls 50613, 1958
- Schwartz, Charles, M.D., 1148 Staub Court, N.E., Cedar Rapids 52402, 1963
- Scott, Mrs. Richard L., 320 E. Lee, Seymour 52590, 1968
- Seeck, Mrs. Margaret C., Lohrville 51453, 1977
- Seidler, Mrs. Wm. A., Jr., Box 147, Jamaica 50128, 1978
- Serbousek, Miss Lillian (S), 1226 Second St., S.W., Cedar Rapids 52404, 1932
- Seward, Garnita, Route 2, Eldora 50627, 1978
- Shepley, Rohn K., R. R. No. 6, Ottumwa 52501, 1978
- Sherburne, Floyd, Route 1, Box 38, Guthrie Center 50115, 1978
- Shires, Thomas K., 301 Woodridge, Iowa City 52240, 1977
- Silcock, Dr. W. Ross, Route 2, Malvern 51551, 1975
- Silver, Mr. and Mrs. Ralph, 109 S. State St., Lamoni 50140, 1961, 1956
- Sinclair, Jim, 608 Detorit W. No. 3, Indianola 50125, 1977
- Slife, Nancy L., Route 2, Eldora 50627, 1975
- Smalling, Mrs. Ray H., 803 - 12th St., Ames 50010, 1978
- Smith, Walter P., 693 Franklin Ave., Council Bluffs 51501, 1977
- Sorensen, Mrs. Raymond E., 302 W. Washington, Winterset 50273, 1967
- Spears, Mrs. Marie, 103 Southview Circle, Shenandoah 51601, 1970
- Stark, Harriet L., 107 Fairview Drive, Forest City 50436, 1978
- Staudt, Tom, 931 N. Summit, Iowa City 52240, 1974
- Steffen, E. W., 1000 Maplewood Drive, N.E., Cedar Rapids 52402, 1940
- Steimel, Earl W., 10746 Hammond Ave., Waterloo 50701, 1975
- Steiner, Robin, Route 1, Woolstock 50599, 1974
- Stewart, Mrs. Hazel, Conrad 50621, 1975
- Stewart, Paul A., 203 Mooreland Dr., Oxford, N.C. 27565, 1977
- Stone, Larry A., St. Olaf 52072, 1975
- Stone, Thomas, 1632 Woodmayr, Waterloo 50703, 1976
- Stoppel, Kaye V., 658 - 56th St., Des Moines 50312, 1978
- Strabala, Scott A., 602½ 23rd St, Ft. Madison 52627, 1978
- Strawn, Mrs. John T., Jr., Route 1, Vinton 52349, 1956
- Strickland, Jud W., 413 S. 3rd St. West, Mt. Vernon 52315, 1945
- Studer, Mrs. Lee, 306 E. Main, Elkhart 50073, 1978
- Sweet, Mrs. Orrin (Arlene), 217 W. 4th St., Aurelia 51005, 1975
- Talbot, Marjorie G., Route 1, Box 206, Keokuk 52632, 1977
- Tanner, Mrs. Raymond, 104 East 22nd St., Atlantic 50022, 1977
- Taylor, Mrs. George, 1739 - 12th Ave., Manson 50563, 1977
- Thompson, Fred K., 2830 McGowan Blvd., Marion 52302, 1978
- Thompson, Joan C., Route 6, Woodland Heights, Iowa City 52240, 1978
- Thompson, Michael, 1002 E. Washington, Council Bluffs 51501, 1978
- Thompson, Mrs. Mildred W., Route 4, Box 137, Cherokee 51012, 1975
- Thornburg, M. A., 901 S. Warfield Dr., Mt. Airy, Maryland 21771, 1973
- Thornburg, Robert, Route 1, Pleasantville 50225, 1977
- Thornton, Mrs. P. C., 326 Otsego St., Storm Lake 50588, 1951
- Toyne, Mrs. George W., 206 - 4th Ave. S., Humboldt 50548, 1952
- Triplett, Mrs. Burdell, 1312 2nd Ave. E., Spencer 51301, 1977

- Turner, Miss Almira, 1003 West St., Corning 50841, 1977
- Turner, Dr. Richard, Grinnell College, Grinnell 50112, 1978
- Unmacht, James H. II, 2149 Carter Road, Dubuque 52001, 1978
- Upp, Mrs. Orville T., 608 Wildwood Drive, Ottumwa 52501, 1950
- Van Cleve, G. Bernard, 304 S. Winebiddle St., Pittsburgh, Pa. 15224, 1967
- Vander Meer, Steven (J), 808 Plymouth St. S.E., LeMars 51031, 1977
- Vander Streek, Nola, 1335 Northwest Drive, Pella 50219, 1972
- Van Dyk, Dr. John, 736 E. 1st St., Sioux Center 51250, 1970
- Vane, Dr. and Mrs. Robert F., 2220 Grande Ave. S.E., Cedar Rapids 52403, 1940, 1946
- Van Liew, Virginia (S), 3100 Grand Ave. Apt 4-A, Des Moines 50312, 1968
- Vaughn, Mary Beth, 201 E. Clarinda, Shenandoah 51601, 1976
- Wahab, Charles E., 3333 Grand Ave., Apt. 181, Des Moines 50312, 1977
- Wahlstrom, Shirley A., 606 West Beech, Cherokee 51012, 1977
- Walker, Pearle C., 301 Albany, Ottumwa 52501, 1943
- Wallace, Mrs. Lynn E., Route 3, Box 9182, Spirit Lake 51360, 1975
- Walters, Elizabeth L., 207 West Thomas Ave., Shenandoah 51601, 1964
- Walton, Robert J., Route 1, Peosta 52068, 1978
- Ware, Richard, 34 Sunset Drive, Jacksonville, Ill. 61650, 1961
- Warters, Mrs. Lurene A., 5115 Woodland Ave., Des Moines 50312, 1977
- Watson, S. Arthur, 1325 - 98 North West St., Terrace Gardens, Wichita, Kansas 57203, 1971
- Weaver, Miss Gertrude S., 1425 Nebraska, Sioux City 51105, 1946
- Webb, Dr. Morgan C., 1325 S. Newton St., Sioux City 51106, 1966
- Wellander, Jeff (S), 3351 Sims Drive, Des Moines 50317, 1972
- Weller, Dr. Milton W., Dept. Ent, Fisheries & Wildlife, U. of Mn., St. Paul, Minn. 55101, 1958
- Wenger, Mrs. Helen F., 100 D. St., Hamburg 51640, 1978
- Wentworth, Mrs. June, Wheatland 52777, 1974
- Wershofen, Miss Pauline, Route 4, Box 193, Winona, Minn. 55987, 1954
- White, Miss Evelyn Jean, P.O. Box 1340, Carlsbad, Calif. 92008, 1975
- Widner, Russell R., M.D. (S), Route 6, Marshalltown 50158, 1977
- Wiedemeyer, Mrs. Eva B., 1015 N. Adams St., Carroll 51401, 1975
- Wilcox, Florence M., 510 - 7th St., Ames 50010, 1978
- William, Patricia, Route 1, Hinton 51024, 1974
- Willis, Miss Myra G., 1224 - 13th St. N.W., Cedar Rapids 52405, 1937
- Willis, Mr. and Mrs. Paul K. (F), Thornton 50479, 1977
- Wilson, Barbara L., Route 1, Box 41, Hastings 51540, 1978
- Wilson, Valeria Louise, Route 1, Clinton 52732, 1973
- Wuellner, Mrs. Keith A., 1321 Osborn St., Burlington 52601, 1966
- Wymore, Gary, 847 South Ward, Ottumwa 52501, 1975
- Yaeger, Mr. and Mrs. Roger (F), 8604 Carole Circle No. 3, Urbandale 50322, 1977
- York, Phyllis, 1021 Oak St., Iowa Falls 50126, 1978
- Young, Lewis C., 2160 N.W. 90th St., Des Moines 50322, 1974
- Young, Dr. Richard A. (S), 820 2nd Ave., N.E., Clarion 50525, 1963
- Zachman, Gary E., 1704 Beaver Pond Road, Inverness, Ill. 60067, 1978
- Zaletel, Mrs. Linda, 667 Pammel Ct., Ames 50010, 1974
- Zaruba, Mrs. Elinore, 1501 Yuma Dr., N.W., Cedar Rapids 52405, 1978
- Zimmer, Barry R. (J), 6203 Gainborough, Amarilla, Tex. 79106, 1974
- Zorn, Ruth P., 544 N. 3rd St., Marshalltown 50158, 1977

LIBRARIES

- Library, Iowa State Univ., Ames 50011
- Wissenschaftliche, Buchhandlung, Scientific Booksellers, Librairie Scientifique, Karger Libri A.G., Basel, Switzerland
- Senckenbergische Bibliothek, Zeitschriftenabteilung-DFG, Bockenheimer Landstr. 134-138, D-6000 Frankfurt-Main, Bundesrepublik, Deutschland
- Cedar Falls Public Library, 524 Main St., Cedar Falls 50613
- Library, Univ. of Northern Iowa, Cedar Falls, 50613
- Library, Holmes Jr. High, 505 Holmes Dr., Cedar Falls 50613
- Cedar Rapids Public Library, Periodical Service, Cedar Rapids 52401
- Coe College, Stewart Memorial Library, Cedar Rapids 52402
- Clinton Public Library, 306 Eighth Ave. S., Clinton 52732
- University of Missouri, Columbia, Mo. 65201
- Public Library, 4th and Main Streets, Davenport 52801
- S. F. Parson Library, Northern Ill. Univ., DeKalb, Ill. 60115
- Order Division, Des Moines Public Library, 100 Locust St., Des Moines 50309
- State Library, Historical Building, Des Moines 50319
- Ekstrand Elem. School, 1140 - 15th St., DeWitt 52742
- Ficke Laird Library, Univ. of Dubuque, Dubuque 52001
- Science Dept., Univ. of Dubuque, c-o Dr. David Straley, Dubuque 52001
- Wahlert Memorial Library, Loras College, Dubuque 52001
- U. S. Fish & Wildlife Serv., Reg. Library Rm. 642, Fed. Bldg., Ft. Snelling, Minn. 55111
- Grnd Mound Elem. School Library, Grand Mound 52751
- Polk County Conservation Board, Lewis A. Jester Co. Park, Granger 50109
- Fort Hays Kansas St. College, Serials Dept., Forsyth Library, Hays, Kan. 67601
- Library, NP Wildlife Res. Center, P.O. Box 1747, Jamestown, N. D. 58401
- Dwight B. Waldo Lib., Serial Records, W. Mich. Univ., Kalamazoo, Mich. 49001
- Keokuk Public Library, 210 N. 5th St., Keokuk 52632
- The Science Ref. Lib., Bayswater Branch, 10 Porchester Garden, Lindon, W2 4DE, England
- Low Moor Elem. School Library, Low Moor 52757
- Serials Dept., Memorial Library, Western Ill. Univ., Macomb, Ill. 61455
- Bic-Medical Library, Diehl Hall, Univ. of Minnesota, Minneapolis 55455
- 08132 Serials Technical Serv., Mitchell Mem. Library, Miss. St. Univ., Mississippi State, Miss. 39762
- Serials Dept., McGill University Libraries, 3459 McTavish St., Montreal, Quebec, Canada H3A1Y1
- Cornell College Library, Mt. Vernon 52314
- Wilcox Library, William Penn College, Oskaloosa 52577
- Central College Library, Pella 50219
- Science & Engineer Lib., Washington St. Univ., Pullman, Washington 99163
- Dordt College Library, Sioux Center 51250
- Public Library, Sioux City 51101
- Morningside Library, 4005 Morningside Ave., Sioux City 51106
- Oklahoma State University, Edmon Low Library, Serials Section, Stillwater, Oklahoma 74074
- St. Cloud State College, Learning Resources -- Periodicals, St. Cloud, Minnesota 56301
- Dept. of Natural Resources, c-o Carroll Henderson -- Nongame Sup., 390 Centennial Bldg., St. Paul, Minn. 55155
- Serials Dept. -- Library, U. of Illinois, Urbana, Illinois 61801

I. D. Weeks Library, South Dakota, St.
Univ. of, Vermillion, South Dakota
57069

Central Missouri State Univ.,
Periodicals Dept., Library,
Warrensburg, Missouri 64093

Waterloo Public Library, 626
Mulberry, Waterloo 50703

Welton Elem. School Library, Welton
52774

Eastern Michigan University,
University Library, Ypsilanti,
Michigan 48197

SOCIETIES

Ames Audubon Society, Ames 50010,
1977

Audubon Naturalist Society of Cedar
Rapids, Cedar Rapids 50402, 1966

Quad City Audubon Society, Putnam
Museum, Davenport 52804, 1949

Des Moines Audubon Society, Des
Moines 50310, 1947

Dubuque Audubon Club, Dubuque
52001, 1933

Research Request -- I should like to make a request of birders and naturalists in general for recently vacated nests or nest material of any of the following birds: swallows, woodpeckers, wrens, purple martin, bluebird, starling, and others that nest in cavities or shelters. Material should be placed in tight plastic bags and these placed in a cardboard box for shipping. They only need to be packed so they do not shake about. Data such as type of nest, locality (county and nearest town), date, and collector should be included in each bag with the nest. Postage will be returned on any material received.

Nests are desired for research being conducted on the ectoparasites (fleas, lice, feather flies, swallow bugs, ticks, and mites) of Iowa birds and their nests. Please forward any material to Nixon Wilson, Department of Biology, University of Northern Iowa, Cedar Falls, Ia. 50613.

Watch for Blue- or Green-breasted Sandpipers! -- I am seeking your cooperation with research on migration patterns of mid-western shorebirds. Between July 5 and October 10, 1978, we will be dyeing breast feathers of Semipalmated Sandpipers blue or green, near Grand Forks, North Dakota. Birds may also be marked with unique wing tags, following the system outlined on the enclosed filler. Breast-dyeing has provided valuable information in the Canadian Wildlife Service's study of shorebird migration in eastern Canada. We are seeking to complement that study with information on shorebird movements in the center of the continent. Success of this project depends on reports received from dispersal areas, and you may help in two ways.

First, reports of sightings should include: date, time, location, and markings of the bird, as outlined on the filler. Reports should be sent to the address given at the bottom.

Second, you may help spread the word, by posting this information where it is likely to be seen by observers, by forwarding an extra copy to interested individuals, or to an appropriate agency or club, by inserting information about the program into newsletters or memoranda to associates, and simply by being alert for reports of oddly-colored sandpipers.

Please send reports to:
Shorebird Survey
Langmuir Laboratory
Cornell University
Ithaca, New York 14853 USA.

All reports will be acknowledged. Thank you. -- David Lank, Graduate Student of Animal Behavior, Cornell University.